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The Development of a Rapid Train-Up Package and Platoon-Level Scenarios for Armor Training in the Army National Guard

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This report describes the development of a rapid train-up package and tank platoon scenarios for armor training in the Army National Guard. The rapid train-up package, which consists of training materials designed for "opportunity" training and for home study, is intended for use at home stations during inactive duty training, at training sites during annual training, and at mobilization and postmobilization sites during mobilization. The package contains 17 training modules (52 different tasks) for tasks that must be performed from memory; five study guides (18 different tasks or knowledge areas) for acquiring knowledge without access to equipment; and 30 graphic training aids for training and assisting with job performance. The package also contains directions for use and a cross-walk linking armor tasks to the appropriate training method.

Further, the report describes the development of a set of scenarios for training platoon tactics on a mobile version of the Simulation Networking training device (M-SIMNET). The report contains three scenarios--a movement to contact, a hasty attack, and a deliberate

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defense. It describes special requirements for M-SIMNET scenarios and provides guidelines for preparing additional scenarios for M-SIMNET.

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THE DEVELOPMENT OF A RAPID TRAIN-UP PACKAGE AND PLATOON-LEVEL SCENARIOS FOR ARMOR TRAINING IN THE ARMY NATIONAL GUARD

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THE DEVELOPMENT OF A RAPID TRAIN-UP PACKAGE AND PLATOON-LEVEL SCENARIOS FOR ARMOR TRAINING IN THE ARMY NATIONAL GUARD

Introduction

Reductions in the size of the Active Component (AC) force will lead to greater reliance on Reserve Component (RC) units for rapid deployment during national emergencies. RC units, however, have unique training problems that make it difficult for them to maintain a high state of combat readiness. RC units, for example, have less time available for training. Whereas AC units devote most of their time to training, RC units meet only one weekend per month for Inactive Duty Training (IDT) and one 2-week period per year for Annual Training (AT).

Detailed information on training problems experienced by RC units was obtained in a survey conducted by Eisley and Viner (1989). Questionnaires mailed to almost 6,000 Army National Guard (ARNG) and U.S. Army Reserve (USAR) soldiers were returned by approximately two-thirds of the sample. The respondents indicated that more time was needed for training individual skills. Fewer than half of the respondents, however, stated that they would be willing to participate in additional weekend training or to increase the time allotted for annual training.

Based on the results of their survey, Eisley and Viner (1989) recommended that more time be devoted to "hip pocket" or "opportunity" training. They maintained that existing training time could be used more efficiently if crews or squads were to train during pauses in collective training. Eisley and Viner also recommended that RC soldiers be given an opportunity to train themselves using home study materials.

Additional training problems experienced by RC units were identified by the Reserve Forces Policy Board (1990) in its annual report. Among the problems that were cited by the Policy Board were shortages of equipment at home stations, limited access to training areas, shortages of training ammunition, and the need to satisfy other RC requirements such as inspections and briefings. The Reserve Force Policy Board recommended that the use of training simulators and devices in RC units be expanded to help overcome the training problems experienced by these units.

The problems associated with RC training are apt to become even more critical during national emergencies when RC units are mobilized. During mobilization, RC units will have to train-up rapidly at a mobilization site in order to become combat ready. Because of a high rate of turnover in RC units, many units will be assigned soldiers who either are untrained or are trained in the wrong MOS. These soldiers will have to learn how to perform individual tasks while learning to perform the collective tasks required for effective coordination within and between units. Adding to the training problems that will be experienced by RC units during mobilization will be the need to conduct some of this training without equipment. This additional problem will be caused by the requirement to transport equipment to a post-mobilization site ahead of the troops so that the equipment will be available for combat when the troops arrive at the site.

The Need for ARNG Training Materials

The present report describes the development of two training products that were prepared to help alleviate the training problems experienced by RC units prior to or during mobilization. One of the products, a package of rapid train-up materials, was developed to fulfill the need for training materials that can be used for opportunity training and home study. The other product, a set of scenarios for implementation on a mobile battlefield simulator, was developed to facilitate the use of the simulator for training tactics in RC units.

Rapid Train-Up Materials for M1/M1A1 Units

Although Eisley and Viner (1989) recommended that "opportunity training" be expanded in order to achieve more efficient use of training time during IDT or AT, any training materials that would be developed for "opportunity training" during IDT or AT could be used also for training at a mobilization or post-mobilization site. A rapid train-up program suitable for "opportunity training" had been developed by the U.S. Amy Research Institute for the Behavioral and Social Sciences (ARI) for armor units using the M60A3 tank (Kraemer, Anderson, Kristiansen, & Jobe, 1985). The program consisted of 79 training modules prepared for tank commanders, gunners, drivers, and loaders. These modules, which were to be used to train basic individual tank gunnery skills required for armor combat, were the first training programs developed specifically for rapid armor force mobilization.

Subsequent to the development of the rapid train-up package by Kraemer, et al. (1985), the M60A3 tank has been replaced by the M1 or M1A1 tank. Consequently, a new set of armor training materials was needed--a set for the M1 and M1A1 tanks.

Training Scenarios for the Mobile Simulation Networking (M-SIMNET) Training Device

In an attempt to solve many of the training problems experienced by RC units, the Defense Advanced Research Agency (DARPA) has developed two prototypes of a mobile version of the Simulation Networking (SIMNET) training system. One of these simulates an M1 tank platoon; the other simulates a Bradley Fighting Vehicle platoon. The prototypes will be employed by the ARNG to explore how they can be used for tactical training during IDT and to serve as a model for the Close Combat Tactical Trainer (CCTT), a more advanced networked battlefield simulation that is currently being planned.

Training requirements for ARNG armor unit, which are provided by the Standards in Training Commission (STRAC), are published in Standards in Weapons Training, Pamphlet 350-38 (Department of the Army, 1988b). STRAC guidelines specify that ARNG units are to train on basic and intermediate gunnery tables (Tables I-VIII) and basic, intermediate, and advanced tactical tables (Tables A-I). Consistent with these guidelines, the 12th Cavalry Regiment at Fort Knox has produced a pamphlet describing how SIMNET can be used for training the tactical tables.

Although platoon-level tactical training is not a STRAC requirement, M-SIMNET may be a useful device for training platoon-level tactics in ARNG units. Because M-SIMNET is more suitable for tactical training than gunnery

training, any test of the device would be incomplete without exploring its capabilities for training tactics at the platoon level. The use of M-SIMNET to train platoon-level tactics, however, requires that platoon scenarios be implemented on the device. Scenarios required for training on M-SIMNET differ in some respects from those required for training in the field. These differences are caused in part by the degree to which various battlefield characteristics are simulated on M-SIMNET. Drucker and Campshure (1989) observed that some battlefield activities are not simulated at all on SIMNET (e.g., dismounting, employing chemical alarms), some are simulated at a low level of fidelity (e.g., conducting reconnaissance, selecting fire positions), and some are simulated at a high level of fidelity (e.g., sending communications, planning combat operations). Differences in scenario requirements are also caused by the need to specify how M-SIMNET's special features (e.g., semi-automated force, plan view display) are to be used to conduct the simulated mission or to evaluate performance.

Whenever a battlefield simulator is available for training tactics, each unit using the simulator is generally expected to develop its own scenarios. By developing and using its own set of scenarios, each unit would be able to focus on its own training needs. Before training developers can develop scenarios for any battlefield simulator, however, they must be familiar with the operation of the simulator, its capabilities, its limitations, and its special features. Consequently, it is unlikely that training developers will be able to develop adequate scenarios for M-SIMNET until they acquire actual experience with the device. In the meantime, units must use the simulator for training whenever it is available. It would be helpful, therefore, if a unit were to have access to a set of prepared or "canned" scenarios. This would enable unit training personnel to conduct tactical training while the training developers become more experienced with the simulator. As a secondary benefit, the "canned" scenarios would serve as a model for training developers to use when preparing scenarios tailored to meet their unit's training needs. The preparation of a set of scenarios for M-SIMNET is the second purpose of this project.

The Development of the Rapid Train-Up Package

Any package of rapid train-up materials should be convenient enough to provide crews immediate access to the materials. Ideally, the package should be sufficiently small to be stored inside a tank without interfering with the operation of the vehicle. To enable the package to be this small, it should contain only those training materials that are most likely to be needed. In addition, the materials themselves should be reasonably small in size.

Identifying the Requirements for a Rapid Train-Up Package

The first step performed during the development of the rapid train-up package was to identify how the package would be used at a unit's home station, at its mobilization site, and at a post-mobilization site. The requirements for the various components of the package were then developed to facilitate the use of the package at these different sites.

Requirements for opportunity training. Materials for opportunity training should be small enough to fit in the tank commander's pocket. By having immediate access to these training materials, the tank commander would be able to train his crew whenever an unscheduled training opportunity occurs.

The materials should be versatile enough, however, so that other crew members or other members of the platoon or company could also use them. The materials should contain all of the essential information needed for training. Included should be information on how to perform the task, prerequisite skills, required equipment, cautions, and warnings. In addition, both a pretest and a posttest should be included. The pretest would be used to determine whether or not a crewman actually needs training on a particular task, and the posttest would be used at the end of training to determine if the crewman successfully learned to perform the task.

Requirements for self study materials. Materials for self-study need not be as small as those for opportunity training, but they should be small enough to minimize the overall size of the package. Because the user may have to use the self study materials when the tank or other equipment may not be available for practicing tasks, the emphasis should be on acquiring knowledge rather than skills. The self study materials should contain a pretest to determine if the user already possesses the required knowledge, and a posttest to assess whether the required knowledge was acquired. The information should be presented in enough detail so that the tank crewman can acquire the knowledge without using other sources.

Other requirements for a rapid train-up package. Some armor-related tasks must be performed from memory (e.g., apply immediate action for 105-mm main gun failure-to-fire) because (a) speed of performance may be essential for battlefield survival and (b) combat is an inopportune time to look up information in manuals. Other armor-related tasks do not have to be performed from memory because they are not conducted during combat engagements and because they may be too complex (e.g., prepare and secure the commander's weapon station on an M1 tank). Because speed of performance is less essential, tank crewmen can use manuals or graphic training aids (GTAs) when performing the tasks.

Among the manuals that can be used as references while performing many armor tasks are the operator's manual for the M1 tank (Department of the Army, 1990b) and the operator's manual for the M1A1 tank (Department of the Army, 1990c). Although an operator's manual is normally stored in the vehicle, the manual can be a cumbersome document to use because it has an awkward indexing system. This deficiency can be overcome to a large extent through an improved indexing system that a crewman could use to find specific topics in the operator's manual. By developing an improved indexing system and including it in the rapid train-up package, the operator's manual could serve three training functions: (a) it could be used by the tank commander to train his crewmen to perform a relevant task, (b) it could be used by the crewman for self study, and (c) it could be used by the crewman as an aid in performing tasks that are too complex to be performed from memory.

GTAs can also serve these same three functions. Most GTAs are small and could fit easily into a rapid train-up package. Since there are GTAs that pertain to tasks not described in the operator's manual, they can be a useful supplement to he manual.

Types of Components Comprising the Rapid Train-Up Package

Three type of training materials were deemed necessary to meet the requirements for the rapid train-up package: training modules, study guides,

and GTAs. To facilitate the use of these materials, the package would also have to contain a list of the contents, a cross-walk specifying the training materials available for each task, and a set of instructions on how to use the rapid train-up package.

Training modules. The training modules are intended to be used primarily by tank commanders for opportunity training. Each module is small enough (4-1/8 x 5-1/2 inches) to fit into the tank commander's shirt pocket so that it can be used by the tank commander whenever an opportunity occurs to train one or more members of the crew. To stay within the size specifications, each training module contains only the most important information needed by the trainer.

Each module covers from 1 to 6 tasks. The front page of a module lists the title of the module and contains the following sections:

1. Crewmember Trained (the position or positions of the crewmembers who would perform the tasks covered by the module).

2. Tasks Trained (the tasks that are included in the training module).

3. Equipment (the equipment [e.g., M1 tank, M240 machine gun] needed to train the tasks).

4. References (manuals that provide more detailed information on how to perform the task).

5. Prerequisites (tasks that crewmember must be able to perform before learning how to perform the tasks contained in the training module).

6. Special Instructions (conditions that are required for training).

Each task within the module begins on a new page. The first page contains the name of the module, the name of the task, the equipment needed to train the task, and special instructions. Among the special instructions are cautions and warnings. A warning is a description of actions that must be taken or avoided to prevent serious personal injury. A caution is similar to a warning except that it pertains to less serious personal injury or to damage to the equipment.

The second page and all subsequent pages for each task list the steps required to perform the task, contain spaces for recording whether the crewman met the performance standard (i.e., scored a GO) or failed to meet the standard (i.e., scored a NO GO), present verbal instructions that must be read by the trainer, and present warnings, cautions, and notes (special information for the trainer on how to train the task).

Study guides. Study guides are intended to be used by crewmembers for self study. Although they are larger than training modules (8-1/2 x 5-3/4 inches), the study guides are small enough to be taken by tank crewmen to any site for study. Each study guide is composed of the following sections:

1. An introduction containing a brief description of its contents. The introduction also contains a table of contents and a set of instructions describing how to use the study guide.

2. A pretest, including answers, that is to be used to determine if the crewman already knows the information covered in the study guide.

3. Several instructional sections covering various interrelated topics.

4. A quiz, including answers, at the end of each instructional section. The quiz will enable the crewman to assess whether or not he has learned the information contained in that section.

5. A posttest, including answers, that is to be used to determine if the crewman has acquired the information contained in the study guide.

GTAs. Most of the GTAs included in the rapid train-up package were selected from those published by the Department of the Army or the U.S. Army Armor School. When the necessary GTAs were nonexistent or were obsolete, new GTAs were prepared specifically for the rapid train-up package.

Tasks Selected for the Rapid Train-Up Package

All skill level tasks 1-3 listed in the 19K soldier's manual were considered for possible inclusion in the rapid train-up package. To assure that the package would be no larger than necessary, the first step was to eliminate unnecessary tasks. Tasks were considered to be unnecessary if they were (a) easy to perform without training (e.g., install a hot loop, perform fuel transfer procedures on an M1/M1A1 tank, operate a Caliber .45 pistol) or (b) skill level 3 tasks that any tank commander would be able to perform (e.g., engage targets with the M240 coax machine gun from the commander's weapon station [CWS] on an M1/M1A1 tank, engage targets with a caliber .50 machine gun).

After unnecessary tasks were eliminated, the remaining tasks were reexamined to determine if they should be represented as training modules, study guides, or GTAs. During this reexamination of the tasks, it became apparent that the 19K soldier's manual did not contain a complete list of tasks performed by tank crewmen during combat. Consequently, additional tasks were added to the list of tasks to be included in the rapid train-up package. The identification of these additional tasks was based on the experience of the members of the research staff who were trained in armor, and on the results of previous research that was conducted on the domain of tank gunnery (Hoffman & Morrison, 1988; Morrison & Hoffman, 1988; Meade, 1989; Campshure, 1990). Among the additional tasks were (a) react to loss of engine power on an M1/M1A1 tank, (b) apply immediate action for 105-mm main gun failure-to-fire, (c) estimate range, and (d) acquire targets. In some cases, newly identified tasks were subsumed under other tasks in the 19K soldier's manual. For example, the task "evacuate injured driver from M1/M1A1 tank through loader's hatch" is subsumed under the soldier's manual task "evacuate a wounded crewman from an M1/M1A1 tank."

Once the addition and deletion of tasks was completed, the next step was to identify which tasks (a) would have to be performed from memory (to be included in the rapid train-up package as training modules), (b) require knowledges that could be learned through self-study (to be included in the rapid train-up package as study guides), and (c) were too complex to be performed from memory. Some of the complex tasks would be included in the rapid train-up package as existing or newly developed GTAs. The complex tasks

that were described in the operator's manual were listed in a crosswalk that contained the index term or section title where the task description could be found.

The classification of the final list of tasks into these three categories was performed by subject matter experts.

Preparing the Training Materials

After the formats were developed, various sources of information were used to prepare the training modules, the study guides, and the new GTAs. The primary sources of information were the following:

1. Tank Combat Tables M1, FM 17-12-1 (Department of the Army, 1986)

2. Operator's Manual, Tank, Combat, Full-Tracked: 105-MM Gun, M1, General Abrams, TM 9-2350-255-10-1/2 (Department of the Army, 1990b)

3. Operator's Manual, Tank, Combat, Full-Tracked: 120-MM Gun, M1A1, General Abrams, TM 9-2350-264-10-1/2 (Department of the Army, 1990c)

4. Soldier's Manual, M1/M1A1 Abrams Armor Crewman, MOS 19K, Skill Level 1, STP 17-19K1-SM (Department of the Army, 1989a)

5. Soldier's Manual, M1/M1A1 Abrams Armor Crewman, MOS 19K, Skill Levels 2/3, STP 17-19K23-SM (Department of the Army, 1989b)

6. Mine/Countermine Operations, FM 20-32 (Department of the Army, 1985)

7. Combat Engineer Soldier's Manual and Trainer's Guide, MOS 12B, Skill Levels 2/3/4, STP 5-12B24-SM-TG (Department of the Army, 1990a)

In addition to using these sources, staff members who prepared the training materials contacted subject matter experts whenever necessary and used their own subject matter expertise.

When the initial draft of the training materials was completed, it was reviewed by: (a) U.S. Readiness Group, Fort Knox; (b) Weapons Department, U.S. Army Armor School; and (c) Command and Staff Department, U.S. Army Armor School. The materials were revised as necessary based on reviewer comments and suggestions.

Contents of the Rapid Train-Up Package

The following is a list of the contents of the rapid train-up package:

1. Contents of the ARI Rapid Train-Up Package. This document, which is Appendix A of this report, contains a complete list of the contents of the rapid train-up package.

2. Description of the ARI Rapid Train-Up Package. The description of the rapid train-up package, which is Appendix B of this report, summarizes the three major uses of the package, describes the contents of the package, presents a training strategy for the package, and recommends techniques for using each of the different components.

3. Training Methods and Job Aids for 19K Tasks Selected for the ARI Rapid Train-Up Package. This document, which is Appendix C of this report, is a crosswalk linking each selected task to the appropriate training method (i.e., training module or study guide) and/or job aid (e.g., GTA, operator's manual, field manual). In addition, the document lists any prerequisite tasks that a crewmember must be able to perform before receiving training on a selected task. This list of prerequisite tasks was generated by the staff members who were trained in armor.

The document is organized by skill level and subject matter paralleling the organization of the 19K soldier's manual. All GTAs listed in the document are included in the rapid train-up package. References to sections in the operator's manuals for the M1 and the M1A1 tanks are presented by index topic or section title rather than by page number. Page numbers are not presented because the same topic can appear on different pages in different editions of the operator's manuals.

4. Information and Instructions for Using Training Modules. This document, which was written specifically for trainers, contains instructions on how to use the training modules. The document is the same size as the training modules so that the tank commander can carry it in his shirt pocket. The document is located in the rapid train-up package in the manilla envelope containing the training modules.

5. Training Modules. The rapid train-up package contains 17 training modules encompassing 52 different tasks. Each module comprises one to six tasks. The training modules and the tasks encompassing each module are listed in the summary of the package contents in Appendix A. The different tasks within a single training module are interrelated since they pertain to the same component of the tank or the same crewman function (e.g., emergency driving procedures, operator maintenance on a caliber .50 M2 machine gun).

6. Study Guides. The rapid train-up package contains five study guides encompassing 18 different tasks or knowledge areas. The study guides and the tasks and knowledge areas encompassed by each guide are listed in the summary of the package contents in Appendix A.

7. GTAs. The package contains 30 GTAs including 9 that were developed specifically for the rapid train-up package. The specific GTAs that are contained in the package are listed in the summary of package contents in Appendix A.

8. Crew Checklist for the M1 Tank. Each rapid train-up package also contains Crew Checklist for Tank, Combat, Full-Tracked, M1, General Abrams, TM 9-2350-255-CL (Department of the Army, 1983). The checklist, which is similar to a GTA, contains summaries of procedures described in the operator's manual for the M1 tank. Most of the procedures summarized in the checklist also pertain to the M1A1 tank. The checklist is included in the rapid train-up package because its size (4 x 5-3/4 inches) makes it much more convenient to

use than the operator's manual. The crosswalk, which is titled "Training Methods and Job Aids for 19K Tasks Selected for the ARI Rapid Train-Up Package," specifies the tasks for which the checklist would be an appropriate job aid (see Appendix C).

The Development of Scenarios for M-SIMNET

Guidelines for training platoon-level tactics are presented in Mission Training Plan for the Tank Platoon, ARTEP 17-237-10-MTP (Department of the Army, 1988a). These guidelines specify that tactical training should be conducted in a field training exercise (FTX). The events that are to occur during the FTX are to be depicted in a scenario and initiated by an operations order (OPORD).

Although the guidelines presented in Mission Training Plan for the Tank Platoon, ARTEP 17-237-10-MTP (Department of the Army, 1988a) were written for the field, the requirement for a scenario also applies to M-SIMNET. There are important differences, however, in the way a mission would be conducted in the field and the way it would be conducted on M-SIMNET. Because of these differences, a scenario written for an FTX may not be suitable for implementation on M-SIMNET.

Many of the differences between the conduct of a mission in the field and its conduct on M-SIMNET are due to the fidelity of the simulation. Many components of the tank are not simulated at all on M-SIMNET (e.g., machine guns, gunner's auxiliary sight), or they are nonfunctional (e.g., release of palm switches will not cause the lead to be dumped). Since it is impossible for soldiers to use nonexistent or nonfunctional components, the scenarios must be written so that these components would not normally be employed during the mission. For example, there are no hatches on the tank simulated by M-SIMNET. Because there are no hatches, the platoon leader cannot give hand-and-arm signals. Without hand-and-arm signals, the platoon leader must use the radio to communicate with the other tanks in the platoon. Because of the need to communicate, the scenario should not require the platoon to operate in radio-listening silence.

Perhaps a more serious problem is created by differences in the way tasks are performed in the field and the way they are performed on M-SIMNET. Drucker and Campshure (1990) observed that many of the activities involved in performing platoon-level tasks are not performed on SIMNET as they are in the field. These performance differences are listed in Appendix B of the SIMNET Users' Guide (U.S. Army Armor School, 1989). In many cases, the performance differences are of little consequence. A loader, for example, simulates the removal of a main gun round from stowage on M-SIMNET by pushing a button. Performing the task in this manner is unlikely to affect his performance of the same task in an actual tank. On the other hand, Kraemer and Bessemer (1987) observed that firing the main gun on SIMNET without the need to ever "dump the lead" can cause a deterioration in gunnery performance during a live gunnery exercise.

These differences between the performance of a mission in the field and its simulation on M-SIMNET can affect the preparation of scenarios. A training developer must be careful to write scenarios that do not require a unit to perform activities that cannot be performed on M-SIMNET. Using an activity from a previous example, the training developer must avoid the

requirement for radio-listening silence. A more difficult problem is created by tasks that can be only partially performed on M-SIMNET. If practicing these tasks leads to decrements in performance on the actual equipment (i.e., negative transfer), the scenarios must not require the tasks to be performed. Unfortunately, there is little information available identifying the tasks for which practice on M-SIMNET leads to performance deterioration in the field. The training developer, nevertheless, should be aware that negative transfer may occur and should prepare scenarios so that no suspicious tasks are included.

Characteristics of Scenarios for ARNG Training on M-SIMNET

Because of the problems that were described above, the tasks to be performed during the M-SIMNET training exercise must be carefully selected, and the scenarios that initiate these tasks must be carefully prepared. A package of training materials for M-SIMNET has been prepared by the U.S. Army Armor School. Contained within that package is the SIMNET Users' Guide (U.S. Army Armor School, 1989) which categorizes tasks according to the degree to which they can be performed on SIMNET (high, partial, or minimal) and lists those that cannot be performed at all. Notes are presented for partial and minimal tasks explaining what aspects of the tasks are not adequately simulated. Scenarios must be written to ensure that no task is selected for training on M-SIMNET unless it can be performed on the device. The training developer must also be sure that crewmen are aware of differences in how tasks are performed on M-SIMNET and how they are performed on the actual equipment.

Training objectives. Once tasks are selected for training, training objectives must be prepared. Training objectives are statements specifying the tasks that are to be trained, the conditions under which the tasks are to be performed, and the standards to which they must be performed. The training objectives are of particular importance because they will be linked to the evaluation of performance and, subsequently, to the feedback that is provided during an after action review. Care must be taken to ensure that the performance of the task can be observed by the trainer or that the trainer can be provided a record of performance on M-SIMNET. If a task cannot be observed and if no record of performance is available, then the task should be eliminated from the scenario.

Instructions for setting up M-SIMNET. Before training can be conducted on M-SIMNET, various decisions must be made concerning battlefield conditions. These decisions include the size and composition of the opposing force (OPFOR), the location of friendly and OPFOR vehicles, the maintenance status (age and milage) of the vehicles, the amount and type of ammunition, and the amount of fuel. M-SIMNET's semiautomated force (SAFOR) capability enables one or two persons to control unmanned friendly and OPFOR vehicles. If this capability is used for conducting training, an additional set of decisions must be made and input into M-SIMNET. Included in these decisions are the skill level of SAFOR controlled gunners, the start grid for SAFOR controlled vehicles, the orientation of these vehicles, the end grid for these vehicles, instructions pertaining to movement, and instructions pertaining to engagements.

Use of M-SIMNET maps. Terrain displayed on M-SIMNET is limited to the terrain that is programmed into the M-SIMNET data base. Although the terrain data base corresponds roughly to areas near Fort Knox and to other actual

areas, the correspondence between the terrain as coded into the data base and the actual terrain is only approximate. Consequently, maps developed specifically for M-SIMNET must be used for the scenarios. The map must be referenced in the OPORD for the scenario, and overlays for these maps must be prepared.

Directions for performance evaluation. The training objectives for an M-SIMNET exercise will probably be written in general terms (e.g., platoon moves along specified axis in accordance with the operations order). It will be necessary for the training developer to develop a list of specific behaviors that the trainer can monitor during the training exercise. The platoon, for example, may be required to move in a wedge formation using the traveling technique. By listing the specific activities that are to be scored, the trainer will know what behaviors to observe. The trainers will also need guidance on how to observe these behaviors. For example, many platoon activities may be observed on the plan view display (PVD), a graphical display of the battlefield or a selected portion of the battlefield. Many behaviors may be observed from the stealth vehicle, a simulated vehicle that cannot be seen from the simulated vehicles. It may also be possible to obtain a record of performance using the Unit Performance Assessment System (UPAS), a computerized system for obtaining performance records developed by ARI.

Length and difficulty level of scenarios. The time needed to conduct a training exercise on M-SIMNET must not exceed the amount of time the device will be available for training by the platoon. If M-SIMNET is available for only one weekend, and if it most be used by three platoons on this weekend, each platoon may have access to the device for only four or five hours. Because part of this time must be used to train crews to operate M-SIMNET, even less time will be available for training, depending on how familiar the crews are with M-SIMNET. A scenario obviously cannot require a 12-hour movement to contact leading to a hasty attack if only 1-3 hours are available for training. Similarly, if the platoon does not have enough experience to implement a difficult scenario, the platoon may get little benefit from attempting to implement the scenario. An easier scenario that a unit may implement may be of more value than a harder scenario that a unit cannot implement.

Guidelines for Preparing Scenarios for M-SIMNET

Instructions for preparing scenarios for armor training on M-SIMNET are located in Appendix D. These instructions take into account the special characteristics of scenarios for ARNG on M-SIMNET.

Sample Scenarios

Three platoon level scenarios have been prepared based on these instructions: conduct a movement to contact, conduct a hasty attack, and conduct a deliberate defense. They are located in Appendixes E, F, and G respectively.

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Appendix A

Contents of the ARI Rapid Train-Up Package

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- Apply Immediate Action for 120-mm Main Gun Failure-to-Fire

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- Disassemble a Caliber .50 M2 Machine Gun
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- Perform a Function Check on a Caliber .50 M2 Machine Gun
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• GTA 8-5-43	PREVENTIVE MEDICINE COUNTERMEASURES (PMC) FOR COMPANY-SIZE UNITS
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• GTA 11-1-8	ELECTRONIC COUNTER-COUNTERMEASURES FOR OPERATIONS
• GTA 17-3-17	M1 PREPARE-TO-FIRE CHECKLIST
• GTA 17-6-12	TANK SIGHT RETICLE PATTERNS
• GTA 17-6-22	START/STOP THE M1 TANK
• GTA 17-6-26	PREPARE AND SECURE THE COMMANDER'S WEAPON STATION ON AN M1-SERIES TANK
• GTA 17-6-37	TANK RANGE CARD/SKETCH RANGE CARD
• GTA 17-6-40	BORESIGHT AND CALIBRATE M1 TANK
• GTA 17-6-44	M1A1 PREPARE-TO-FIRE CHECKLIST
• GTA 17-6-45	BORESIGHT AND CALIBRATE M1A1 TANK
• GTA 17-6-46	BORESIGHT AND ZERO COMMANDER'S WEAPON ON AN M1A1
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GRAPHIC TRAINING AIDS (Continued)

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- FKG 17-42-2 STANDARD ARM AND HAND SIGNALS FOR TRACK VEHICLE DRIVING
- FKG 17-22-9 TANK RANGE CARD
- FKG 23-12-4 MACHINE GUN INSTRUCTIONAL CARD M240/M240C

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Appendix B

Description of the ARI Rapid Train-Up Package

DESCRIPTION OF THE ARI RAPID TRAIN-UP PACKAGE

Introduction

This package of training materials was prepared by the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI). It is designed to be used by the Reserve Components (RC) whenever there is a need for rapid train-up of M1 or M1A1 tank crewmen.

There are three major uses for the ARI Rapid Train-Up Package: (a) for train-up during mobilization, (b) for training crewmen in reconstituted crews, and (c) for sustainment training.

Mobilization

RC units are allotted 39 days for training each year. Because much of this time is devoted to maintenance and other nontraining activities, RC crewmen will require intensive training of critical combat skills if their units are mobilized. The training materials in the package can be used at both mobilization and post-mobilization sites to train these skills and to meet knowledge requirements. The compact size of the package, the comprehensiveness of the tasks that are included, and the flexibility of the training strategy are intended to facilitate the use of the training materials under circumstances that may not be not ideal for training.

Reconstitution

The high turnover rate in many RC units can cause tank crewmen to be replaced by men who are inadequately trained. In some cases, the replacements may have been trained for other crew positions. In other cases, 19K crewmen may have been replaced by personnel trained in a different MOS. The materials in the package can be used by tank commanders or other unit personnel to train new crewmen in reconstituted crews whenever training opportunities occur. The materials can also be used by the crewmen themselves if unit personnel are not available to act as trainers.

Sustainment

The skills and knowledges required to perform most armor tasks deteriorate over time unless tank crewmen continue to practice these tasks. The training materials in the package can be used to help sustain the skills that have already been acquired by RC crewmen.

Package Contents

The ARI Rapid Train-Up Package is small enough to be stored inside a tank, and many of the training materials can be removed from the package and carried in a pocket. Despite its size, the package supports training for 69 tasks listed in the 19K Soldier's Manual and for 43 related tasks and activities that are not specifically listed in the 19K Soldier's Manual. The contents of the package include (a) training modules, (b) study guides, (c) graphic training aids (GTAs), (d) the Crew Checklist for the M1 Tank (TM 9-2350-255-CL), and (e) references to relevant sections in the operator's manual for the M1 tank (TM 9-2350-255-10), the operator's manual for the M1A1 Tank (TM 9-2350-264-10), and various field manuals. The document "Training

Methods and Job Aids for 19K Tasks Selected for the ARI Rapid Train-Up Package" is a crosswalk listing the tasks that are supported by the package and specifying the training method and job aids that should be used to train each task.

Training Modules

A training module is a pocket-sized set of training materials outlining the steps required to perform a task. These modules are intended to be used by a tank commander, platoon sergeant, or other member of an armor unit to train tank crewmen to perform combat critical tasks from memory. To reduce the size of each module, the steps are intended to serve several functions: (a) to serve as a pretest to determine if training is needed; (b) to enable tank crewmen to study how a task is performed; (c) to provide information to the trainer on how a task is performed and on the equipment needed to train the task; (d) to provide warnings to the trainer or crewman involving the performance of the task; and (e) to serve as a posttest to determine the success of training.

The package contains 17 training modules; each training module comprises from 1 to 6 tasks or activities. The modules and the tasks or activities included in each module are listed in the document "Contents of the ARI Rapid Train-Up Package." Instructions on how to use the training modules are contained in a separate pocket-sized document entitled "Information and Instructions for Using Training Modules."

Study Guides

A study guide is a training document designed to be used by armor crewmen for learning critical knowledges. There are several important differences between study guides and training modules: (a) Study guides are designed for self-study whereas training modules are designed for use with trainers/evaluators; (b) study guides are intended to provide knowledges, whereas training modules are intended for training performance skills; (c) study guides do not require the use of equipment; and (d) study guides are not pocket-sized.

The package contains 5 study guides. Instructions on their use are contained in each guide. Each study guide contains (a) a pretest to enable the crewman determine whether or not he already has knowledge of the material covered by the study guide, (b) instructional information on the topics covered by the study guide, (c) a test at the end of each section to enable the crewman to determine if he learned the material in the section, and (d) a posttest to help the crewman determine if he acquired the knowledge of the material in the study guide.

Graphic Training Aids (GTAs)

The GTAs contained in this package are brief outlines of the steps that are involved in performing a task. GTAs are useful as (a) sources of information on tasks that do not have to be performed during the conduct of a battle, particularly tasks that are too complex to be performed from memory; (b) training materials that can be studied by tank crewmen; and (c) training materials that can be used by tank commanders and other armor personnel to train tank crewman. The rapid train-up package contains 31 GTAs. Twenty-four

of these are distributed by the Department of the Army or by the U.S Army Armor Center at Fort Knox. The other seven GTAs were prepared by ARI.

Crew Checklist for M1 Tank (TM 9-2350-255-CL)

The crew checklist for the M1 tank contains summaries of procedures that are described in the M1 operator's manual (commonly referred to as the Dash 10). It can serve the same functions as those served by GTAs. Although the crew checklist was prepared for the M1 tank, most of the information also pertains to the M1A1 tank. The crosswalk contained in the package specifies which M1 and M1A1 tasks are accurately described in the crew checklist.

References to the Operator's Manuals for M1 and M1A1 Tanks

Although the operator's manuals were not intended to be used as training materials, the information contained in these documents are sufficiently detailed that they can be used for training when other materials are not available. The trainers and tank crewman should use the operator's manual just as they would use the training modules, although the manual is obviously not pocket-sized and tasks are often difficult to locate. To help the user locate the relevant sections within the operator's manual, the crosswalk specifies the index topics or section titles (in parentheses) for tasks that are appropriately described in the manual. Although operator's manuals are not included in the package, the document should be available in each tank.

References to Field Manuals

The crosswalk contains references to several field manuals. These manuals, which are not included in the package, can be used to supplement the training materials that are contained in the package. They also can be used as training materials when no others are available.

Training Strategy

Approach to Training

The ARI Rapid Train-Up Package can be used either informally on a spontaneous basis or more formally as part of a planned training schedule.

Informal training. Informal training is performed "in the cracks"--that is, training is conducted as opportunities occur. For example, the tank commander can use a training module to train his crew if the crew completes its maintenance sooner than expected and is waiting for other tanks in the platoon to finish. The small size of the training modules enables the tank commander to carry some of the modules with him throughout the day and to use the materials as opportunities arise. In addition, by keeping the package in the tank or at some other location where it would be accessible, other crewmen would have ready access to the training materials in the package. Crewmen could choose to use these materials, such as the study guides, whenever they have no other duties to perform.

Formal training. Formal training is conducted according to a schedule or plan. The training managers should specify the training needs of individuals in their company in terms of tasks for which they need additional training. With these tasks in mind, the managers should examine the crosswalk

to identify the training materials (training modules, study guides, or job aids) that should be used. The crosswalk also indicates prerequisite tasks that the soldiers should know before using these materials. The training managers should determine whether or not soldiers need training on the prerequisite tasks as well. If there is some doubt about the need for such pretraining, soldiers should be quickly evaluated on the prerequisites using the pretests contained in the appropriate training modules and/or study guides.

Training Techniques

The recommended techniques for training differ somewhat for the training modules, study guides, and the job aids. The recommended techniques for each training method are described below.

Training modules. For the most part, training modules address Skill Level 1 tasks. Before selecting a training module, the trainer should determine if there are any prerequisite tasks associated with that module. If so, the trainer must determine if the tank crewman can perform the prerequisite task. If he cannot, the prerequisite task must be trained first. Once a task is selected for training, some planning is necessary because each module requires equipment and a trainer/evaluator. If the need to use training modules is widespread across the unit, the company training managers can consolidate equipment and trainers into a classroom situation wherein experienced personnel can train those tasks with which they are most familiar. For instance, a senior driver can train several drivers at once, or the Company Master Gunner can train several gunners. On the other hand, if the need to use training modules is not widespread across the unit, the training manager can delegate the training responsibility to the individual tank commanders. Each tank commander would be responsible for training his own crewmembers. It is anticipated that the package will be used primarily by tank commanders on an "as needed" basis.

Study guides. In contrast to the training modules, which address Skill Level 1 tasks, the study guides address tasks at Skill Levels 2 and 3. The study guides require less planning than the training modules because the guides are designed to be self-administered and require no equipment. Information on how to use a study guide is provided at the front of each guide. Although the guides require no trainer per se, progress on the study guides should be periodically monitored by a senior person in the unit who has the appropriate background to judge the achievement of a crewman. For instance, gunners may be judged by the company master gunner, while a tank commander may be rated by a platoon sergeant or platoon leader.

Job aids. One or more job aids (field and technical manuals, GTAs, and checklists) are cited in the crosswalk for every task supported by the package. These job aids were considered to be adequate training materials for many of the tasks; consequently, no additional materials (training modules or study guides) were developed. If neither a training module nor a study guide was prepared for a task, the job aids should be used as if they were training modules. For all tasks for which training modules or study guides were prepared, the modules or guides should be regarded as the primary training method. The job aids should be used as supplements to the training modules and study guides, not as substitutions.

Appendix C

Training Methods and Job Aids for 19K Tasks Selected for the ARI Rapid Train-Up Package

TRAINING METHODS AND JOB AIDS FOR 19K TASKS
SELECTED FOR THE ARI RAPID TRAIN-UP PACKAGE

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
		Skill Level 1		
Communications				
071-326-0608	Use Visual Signalling Techniques While Mounted	None		• FM 21-60: Visual Signals • FKG 17-42-2: Standard Arm and Hand Signals for Track Vehicle Driving
113-571-1019	Establish, Enter, and Leave a Radiotelephone Net	None		• GTA 11-1-6: Voice Radio: Communicating Right • GTA 11-1-7: Send a Radio Message • FKG 11-1-4: Radiotelephone Procedures
113-573-6001	Recognize Electronic Countermeasures (ECM) and Implement Electronic Counter-Countermeasures (ECCM)	None	113-571-1019: Establish, Enter, and Leave a Radiotelephone Net	• GTA 11-1-6: Voice Radio: Communicating Right • GTA 11-1-8: Electronic Counter-Counter Measures for Operations
113-587-1061	Prepare AN/VRC-12 Series Radio for Operation	None		• TM 9-2350-255-10-1: Radio Set AN/VRC-12 • TM 9-2350-264-10-1: Radio Set AN/VRC-12
113-587-1062	Prepare Radio Set AN/VRC-64 or AN/GRC-160 for Operation	None		• FKG 11-6-0: Placing the AN/VIC-1 and AN/VRC-64 Into Operation • TM 9-2350-255-10-1: Radio Set AN/VRC-64 • TM 9-2350-264-10-1: Radio Set AN/VRC-64
NBC				
031-503-1022	Decontaminate Equipment Using M13 Decontaminating Apparatus, Portable	Training Module: NBC Decontamination Procedures		• Instructions for use are on the canister
031-503-2002	Decontaminate Equipment Using ABC-M11 Decontaminating Apparatus	Training Module: NBC Decontamination Procedures		• Instructions for use are on the canister
031-503-2008	Use and Maintain M8 or M8A1 Alarm System	None		• ARI Graphic Training Aid: Use and Maintain the M8/M8A1 Alarm System
	Protect Against Chemical Attack	None		• GTA 3-5-14: Chemical Protection and Decon

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
Tactics				
171-123-1012	Evade Enemy Antitank Guided Missiles (ATGM)	Training Module: Driver Tasks for the M1/M1A1 Tank	1171-126-1002: Drive an M1/M1A1 Tank	• FM 17-12-1: Antitank guided missile (ATGM) - Evade
Mines				
051-192-1001	Install/Remove the M14 Blasting Antipersonnel Mine	None		• ARI Graphic Training Aid: M14 Antipersonnel Mine • FM 20-32: Mine/Countermine Operations • TM 9-1345-203-12&P: Operator's and Unit Maintenance Manual for Land Mines
051-192-1002	Install/Remove the M16A1 Antipersonnel Mine	None		• ARI Graphic Training Aid: M-16 Series Antipersonnel Mine • FM 20-32: Mine/Countermine Operations • TM 9-1345-203-12&P: Operator's and Unit Maintenance Manual for Land Mines
051-192-1006	Install/Remove M15 Antitank Mine	None		• ARI Graphic Training Aid: M-15 Antitank Mine With M603 or M624 Fuze • FM 20-32: Mine/Countermine Operations • TM 9-1345-203-12&P: Operator's and Unit Maintenance Manual for Land Mines
051-192-1007	Install/Remove M19 Plastic Antitank Mine	None		• ARI Graphic Training Aid: M-19 Antitank Mine • FM 20-32: Mine/Countermine Operations • TM 9-1345-203-12&P: Operator's and Unit Maintenance Manual for Land Mines
051-192-1008	Install/Remove M21 Antitank Mine	None		• ARI Graphic Training Aid: M-21 Antitank Mine • FM 20-32: Mine/Countermine Operations • TM 9-1345-203-12&P: Operator's and Unit Maintenance Manual for Land Mines

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank and Gunnery				
071-022-0001	Perform Operator Maintenance on a Caliber .50 M2 Machine Gun	Training Module: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun		• TM 9-2350-255-10-1: Clear - Caliber .50 Machinegun; Load - Caliber .50 Machinegun • TM 9-2350-264-10-1: Clear - Caliber .50 Machinegun; Load - Caliber .50 Machinegun
	Clear a Caliber .50 M2 Machine Gun	Training Module: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun		• TM 9-2350-255-10-1: Clear - Caliber .50 Machinegun • TM 9-2350-264-10-1: Clear - Caliber .50 Machinegun
	Disassemble a Caliber .50 M2 Machine Gun	Training Module: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun		• TM 9-1005-213-10: Operator's Manual, Cal. .50 M2 Machinegun
	Reassemble a Caliber .50 M2 Machine Gun	Training Module: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun		• TM 9-1005-213-10: Operator's Manual, Cal. .50 M2 Machinegun
071-022-0002	Perform a Function Check on a Caliber .50 M2 Machine Gun	Training Module: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun		• TM 9-1005-213-10: Operator's Manual, Cal. .50 M2 Machinegun
	Load a Caliber .50 M2 Machine Gun	Training Module: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun Training Module: Operate a Caliber .50 M2 Machine Gun		• TM 9-2350-255-10-1: Load - Caliber .50 Machinegun • TM 9-2350-264-10-1: Load - Caliber .50 Machinegun
071-022-0003	Operate a Caliber .50 M2 Machine Gun	Training Module: Operate a Caliber .50 M2 Machine Gun	071-022-0001: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun	• TM 9-2350-255-10-1: Fire - Caliber .50 Machinegun; Clear - Caliber .50 Machinegun; Failure-to-Fire - Caliber .50 Machinegun • TM 9-2350-264-10-1: Fire - Caliber .50 Machinegun; Clear - Caliber .50 Machinegun; Failure-to-Fire - Caliber .50 Machinegun
	Fire a Caliber .50 M2 Machine Gun	Training Module: Operate a Caliber .50 M2 Machine Gun		• TM 9-2350-255-10-1: Fire - Caliber .50 Machinegun • TM 9-2350-264-10-1: Fire - Caliber .50 Machinegun

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank and Gunnery (Continued)				
	Unload and Clear a Caliber .50 M2 Machine Gun	Training Module: Operate a Caliber .50 M2 Machine Gun		• TM 9-2350-255-10-1: Clear - Caliber .50 Machinegun • TM 9-2350-264-10-1: Clear - Caliber .50 Machinegun
	Apply Immediate Action on a Caliber .50 M2 Machine Gun	Training Module: Operate a Caliber .50 M2 Machine Gun		• TM 9-2350-255-CL (See Immediate Action for Cal .50 M2 Machinegun Failure to Fire) • TM 9-2350-255-10-1: Failure-to-Fire - Caliber .50 Machinegun • TM 9-2350-264-10-1 Failure-to-Fire - Caliber .50 Machinegun
071-313-3455	Set Headspace and Timing on a Caliber .50 M2 Machine Gun	Training Module: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun		• TM 9-1005-213-10: Operator's Manual, Cal. .50 M2 Machinegun
171-122-1004	Clear/Load an M240 Machine Gun	Training Module: Perform Operator Maintenance on an M240/M240C Machine Gun		• FKG 23-12-4: Machine Gun Instructional Card M240/M240C • TM 9-2350-255-10-1: Loader's - Machinegun, Clearing; Loader's - Machinegun, Loading; Coaxial Machinegun - Clearing; Coaxial Machinegun - Loading • TM 9-2350-264-10-1: Loader's Machinegun - Clearing; Loader's Machinegun - Loading; Coaxial Machinegun - Clearing; Coaxial Machinegun - Loading
171-122-1012	Perform Operator Maintenance on an M240/M240C Machine Gun	Training Module: Perform Operator Maintenance on an M240/M240C Machine Gun		• FKG 23-12-4: Machine Gun Instructional Card M240/M240C • TM 9-1005-313-10: Operator's Manual, M240 Machinegun • STP-17-19K1-SM
	Disassemble an M240 Machine Gun	Training Module: Perform Operator Maintenance on an M240/M240C Machine Gun		• TM 9-1005-313-10: Operator's Manual, M240 Machinegun • STP-17-19K1-SM
	Reassemble an M240 Machine Gun	Training Module: Perform Operator Maintenance on an M240/M240C Machine Gun		• TM 9-1005-313-10: Operator's Manual, M240 Machinegun • STP-17-19K1-SM

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank and Gunnery (Continued)				
	Perform a Function Check on an M240 Machine Gun	Training Module: Perform Operator Maintenance on an M240/M240C Machine Gun		• TM 9-1005-313-10: Operator's Manual, M240 Machinegun • STP-17-19K1-SM
171-122-1030	Apply Immediate Action on an M240 Machine Gun	Training Module: Operate the M240 Machine Gun from the Loader's Station	171-122-1012: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun	• FKG 23-12-4: Machine Gun Instructional Card M240/M240C2 • TM 9-2350-255-CL: (See Immediate Action for 7.62MM Failure to Fire) • TM 9-2350-255-10-1: Machinegun - Failure-to- Fire, Loader's • TM 9-2350-264-10-1: Machinegun - Failure-to-Fire, Loader's
171-126-1040	Evacuate a Wounded Crewman from an M1/M1A1 Tank	Training Module: Evacuate an Injured Crewman from an M1/M1A1 Tank		• TM 9-2350-255-10-2: Injured Crewmember Removal; Injured Driver Removal • TM 9-2350-264-10-2: Injured Crewmember Removal; Injured Driver Removal
	Evacuate Injured Turret Crewman from M1/M1A1 Tank Through Loader's Hatch	Training Module: Evacuate an Injured Crewman from an M1/M1A1 Tank		. TM 9-2350-255-10-2: Injured Crewmember Removal . TM 9-2350-264-10-2: Injured Crewmember Removal
	Evacuate Injured Driver from M1/M1A1 Tank Through Loader's Hatch	Training Module: Evacuate an Injured Crewman from an M1/M1A1 Tank		• TM 9-2350-255-CL: (See Remove Injured Driver From Tank Through Loader's Hatch) • TM 9-2350-255-10-2: Injured Crewmember Removal • TM 9-2350-264-10-2: Injured Crewmember Removal
	Evacuate Injured Driver from M1/M1A1 Tank Through Driver's Hatch	Training Module: Evacuate an Injured Crewman from M1/M1A1 Tank		• TM 9-2350-255-CL: (See Remove Injured Driver From Tank Through Driver's Hatch) • TM 9-2350-255-10-2: Injured Driver Removal • TM 9-2350-264-10-2: Injured Driver Removal

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank and Gunnery (Continued)				
171-126-1041	Extinguish a Fire on an M1/M1A1 Tank	Training Module: Extinguish a Fire on an M1/M1A1 Tank		• TM 9-2350-255-10-1: Portable Fire Extinguisher, Operate; Fire Extinguisher - External T-Handle; Disconnect Link, Negative Emergency • TM 9-2350-264-10-1: Portable Fire Extinguisher, Operate; Fire Extinguisher - External T-Handle; Disconnect Link, Negative Emergency
	Operate Portable Fire Extinguisher	Training Module: Extinguish a Fire on an M1/M1A1 Tank		• TM 9-2350-255-10-1: Portable Fire Extinguisher, Operate • TM 9-2350-264-1: Portable Fire Extinguisher, Operate
	Operate External Fire Extinguisher Manual Handle	Training Module: Extinguish a Fire on an M1/M1A1 Tank		• TM 9-2350-255-10-1: Fire Extinguisher - External T-Handle • TM 9-2350-264-10-1: Fire Extinguisher - External T-Handle
	Disconnect Battery Box Negative Quick-Disconnect Link	Training Module: Extinguish a Fire on an M1/M1A1 Tank		• TM 9-2350-255-10-2: Disconnect Link, Negative Emergency • TM 9-2350-264-10-2: Disconnect Link, Negative Emergency
	Extinguish Engine Compartment Fire (Automatic Mode)	Training Module: Emergency Fire Procedures for M1/M1A1 Tank		• TM 9-2350-255-CL: (See Engine Compartment Fire - Automatic Mode) • TM 9-2350-255-10-1: Engine Compartment Fire Extinguisher • TM 9-2350-264-10-1 Engine Compartment Fire Extinguisher
	Extinguish Engine Compartment Fire (Manual Mode)	Training Module: Emergency Fire Procedures for M1/M1A1 Tank		• TM 9-2350-255-CL: (See Engine Compartment Fire - Manual Mode) • TM 9-2350-255-10-1: Engine Compartment Fire Extinguisher • TM 9-2350-264-10-1 Engine Compartment Fire Extinguisher
	Extinguish Crew Compartment Fire (Automatic Mode)	Training Module: Emergency Fire Procedures for M1/M1A1 Tank		• TM 9-2350-255-10-1: Crew Compartment - Fire Extinguisher • TM 9-2350-264-10-1: Crew Compartment Fire Extinguisher

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank and Gunnery (Continued)				
	Extinguish Crew Compartment Fire (Manual Mode)	Training Module: Emergency Fire Procedures for M1/M1A1 Tank		• TM 9-2350-255-CL: (See Crew Compartment Fire) • TM 9-2350-255-10-1: Crew Compartment - Fire Extinguisher • TM 9-2350-264-10-1 Crew Compartment Fire Extinguisher
171-126-1044	Service the Precleaner on an M1/M1A1 Tank	None		• TM 9-2350-255-10-1: Precleaner - Service • TM 9-2350-264-10-1: Precleaner - Service
Driver M1/M1A1				
171-126-1001	Start/Stop the Engine on an M1/M1A1 Tank	Training Module: Driver Tasks for the M1/M1A1 Tank		• GTA 17-6-22: Start/Stop the M1 Tank • TM 9-2350-255-CL: (See Engine Starts and Checks; Engine Shutdown Operations). • TM 9-2350-255-10-1: Engine Start; Engine, Shut Down • TM 9-2350-264-10-1: Engine Start; Engine, Shut Down
171-126-1002	Drive an M1/M1A1 Tank	Training Module: Driver Tasks for the M1/M1A1 Tank	071-326-0608: Use Visual Signalling Technique While Mounted 171-126-1041: Extinguish a Fire on an M1/M1A1 Tank 171-126-1001: Start/Stop the Engine n an M1/M1A1 Tank 171-126-1009: Operate the AN/VVS-2 Night Vision Viewer in the Driver's Hatch on an M1/M1A1 Tank	• TM 9-2350-255-10-1: Drive Tank - General • TM 9-2350-264-10-1: Drive Tank - General
171-126-1003	Slave Start an M1/M1A1 Tank	Training Module: Driver Tasks for the M1/M1A1 Tank	171-126-1002: Drive an M1/M1A1 Tank	• TM 9-2350-255-10-2: Slave Start • TM 9-2350-264-10-2: Slave Start
	React to Loss of Engine Power on an M1/M1A1 Tank	Training Module: Emergency Driving Procedures for the M1/M1A1 Tank	171-126-1002: Drive an M1/M1A1 Tank	• TM 9-2350-255-CL: (See Loss of Engine Power) • TM 9-2350-255-10-2: Engine Power Loss, Immediate Action • TM 9-2350-264-10-2: Engine Power Loss, Immediate Action

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
Driver M1/M1A1 (Continued)				
	React to Loss of Steering Power on an M1/M1A1 Tank	Training Module: Emergency Driving Procedures for the M1/M1A1 Tank	171-126-1002: Drive an M1/M1A1 Tank	• TM 9-2350-255-CL: (See Loss of Steering) • TM 9-2350-255-10-2: Steering Loss, Immediate Action • TM 9-2350-264-10-2: Steering Loss, Immediate Action
	React to Brake Failure on an M1/M1A1 Tank	Training Module: Emergency Driving Procedures for the M1/M1A1 Tank	171-126-1002: Drive an M1/M1A1 Tank	• TM 9-2350-255-CL: (See Loss of Service Brakes) • TM 9-2350-255-10-2: Service Brakes Loss, Immediate Action • TM 9-2350-264-10-2: Service Brakes Loss, Immediate Action
171-126-1007	Prepare Driver's Station for Operation on an M1/M1A1 Tank	None	171-126-1001: Start/Stop the Engine on an M1/M1A1 Tank	• TM 9-2350-255-CL: (See Prepare Driver's Station For Operation) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Driver's Station, Prepare Station for Operation) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Driver's Station, Prepare Station for Operation)
171-126-1008	Secure Driver's Station on an M1/M1A1 Tank	None	171-126-1001: Start/Stop the Engine on an M1/M1A1 Tank	• TM 9-2350-255-CL: (See Power Down and Secure Driver's Station) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Driver's Station, Power Down and Secure) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Driver's Station, Power Down and Secure)

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
Driver M1/M1A1 (Continued)				
171-126-1009	Operate the AN/VVS-2 Night Vision Viewer in Driver's Hatch on an M1/M1A1 Tank	Training Module: Driver Tasks for the M1/M1A1 Tank		• TM 9-2350-255-10-1: Night Vision Viewer - Install in Driver's Hatch; Operate on Tank Power; Operate on Battery Power; Remove from Driver's Hatch. • TM 9-2350-264-10-1: Night Vision Viewer - Install in Driver's Hatch; Operate on Tank Power; Operate on Battery Power; Remove from Driver's Hatch.
171-126-1065	Inspect the Hydraulics on an M1/M1A1 Tank	None	171-126-1079: Adjust Crew Compartment Pressurization on an M1A1 Tank	• TM 9-2350-255-10-1: Hydraulic Checks • TM 9-2350-264-10-1: Hydraulic Checks
Loader M1/M1A1				
171-122-1016	Engage Targets with the M240 Machine Gun from the Loader's Station on an M1/M1A1 Tank	Training Module: Operate the M240 Machine Gun from the Loader's Station	171-122-1012: Perform Operator Maintenance on an M240/M240C Machine Gun	• TM 9-2350-255-10-1: Machinegun - Firing, Loader's • TM 9-2350-264-10-1: Machinegun - Firing, Loader's
171-126-1023	Prepare Loader's Station for Operation on an M1/M1A1 Tank	None	171-122-1012: Perform Operator Maintenance on an M240/M240C Machine Gun	• TM 9-2350-255-CL: (See Prepare Loader's Station For Operation) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Loader's Station, Prepare Station for Operation) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Loader's Station, Prepare Station for Operation)
171-126-1024	Secure Loader's Station on an M1/M1A1 Tank	None		• TM 9-2350-255-CL: (See Power Down and Secure Loader's Station) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Loader's Station, Power Down and Secure) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Loader's Station, Power Down and Secure)

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
Loader M1/M1A1 (Continued)				
171-126-1027	Load/Unload an M250 Grenade Launcher on an M1/M1A1 Tank	Training Module: M250 Grenade Launcher		• TM 9-2350-255-10-1: Grenade Discharger - Loading; Grenade Discharger - Unloading • TM 9-2350-264-10-1: Grenade Discharger Loading; Grenade Discharger Unloading
	Fire M250 Grenade Launcher on an M1/M1A1 Tank	Training Module: M250 Grenade Launcher	171-126-1027: Load/Unload an M250 Grenade Launcher on an M1/M1A1 Tank	• TM 9-2350-255-10-1: Grenade Discharger - Fire • TM 9-2350-264-10-1: Grenade Dischargers, Fire
	Apply Immediate Action for M250 Grenade Launcher Failure-to-Fire	Training Module: M250 Grenade Launcher	171-126-1027: Load/Unload an M250 Grenade Launcher on an M1/M1A1 Tank Fire an M250 Grenade Launcher on an M1/M1A1 Tank (Task in Training Module entitled "M250 Grenade Launcher")	• TM 9-2350-255-CL: (See Immediate Action for M250 Grenade Failure to Fire) • TM 9-2350-255-10-1: Grenade Discharger - Failure-to-Fire • TM 9-2350-264-10-1: Grenade Discharger, Failure-to-Fire
M1 Tank and Gunnery				
171-126-1025	Perform Operator Maintenance on the 105-mm Breechblock Assembly on an M1 Tank	None		• TM 9-2350-255-10-2: (See Chapter 3, Section III, Maintain 105MM Main Gun, Service Breechblock)
171-126-1032	Troubleshoot the 105-mm Main Gun on an M1 Tank	Training Module: Emergency Procedures for 105-mm Main Gun on an M1 Tank		• TM 9-2350-255-10-2: (See Chapter 3, Section II - Troubleshooting, Main Gun)
	Remove a Stuck 105-mm Round	Training Module: Emergency Procedures for 105-mm Main Gun on an M1 Tank	Load/Unload Main Gun on an M1 Tank (Task in Training Module entitled "Load, Unload, and Stow Main Gun Ammunition on an M1 Tank"	• TM 9-2350-255-10-1: Stuck Round, 105mm
	Apply Immediate Action for 105-mm Main Gun Failure-to-Fire	Training Module: Emergency Procedures for 105-mm Main Gun on an M1 Tank		• TM 9-2350-255-CL (See Immediate Action for 105MM Main Gun Failure to Fire) • TM 9-2350-255-10-1: Main Gun - Failure-to-Fire
	Load/Unload Main Gun on an M1 Tank	Training Module: Load, Unload, and Stow Main Gun Ammunition on an M1 Tank		• TM 9-2350-255-10-1: Main Gun - Loading; Clearing

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1 Tank and Gunnery (Continued)				
171-126-1038	Stow Ammunition on an M1 Tank	Training Module: Load, Unload, and Stow Ammunition on an M1 Tank		• TM 9-2350-255-10-1: Stow 105mm Ammunition - General; Hull; Ready; Semi-Ready
171-126-1046	Clean/Service the 105-mm Main Gun on an M1 Tank	*None*	171-126-1025: Perform Operator Maintenance on the 105mm Breechblock Assembly on an M1 Tank	• TM 9-2350-255-10-2: (See Chapter 3, Section III, Maintain 105MM Main Gun)
Loader M1				
171-126-1034	Perform Loader's Prepare-to-Fire Checks and Services on an M1 Tank	None	171-126-1023: Prepare Loader's Station for Operation on an M1/M1A1 Tank 171-126-1038: Stow Ammunition on an M1 Tank	• GTA 17-3-17: M1 Prepare-to-Fire Checklist • TM 9-2350-255-CL: (See Loader's Pre-Fire Operations) • TM 9-2350-255-10-1: Loader's - Machinegun, PMCS; (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services, Loader's Station)
171-126-1035	Perform Loader's After-Firing Checks and Services on an M1 Tank	None	171-126-1024: Secure Loader's Station on an M1/M1A1 Tank 171-126-1034: Perform Loader's Prepare-to-Fire Checks and Services on an M1 Tank	• TM 9-2350-255-CL: (See Loader's Post Fire Operations) • TM 9-2350-255-10-1: Loader's - Machinegun, PMCS; (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services, Loader's Station)
M1A1 Tank and Gunnery				
171-126-1061	Perform Operator's Before-Operation Checks and Services on the M1A1 Tank NBC System	None		• TM 9-2350-264-10-1: (See Table 2-1, Preventive Maintenance Checks and Services - Nuclear, Biological, Chemical [NBC] Systems)
171-126-1064	Clean/Service the 120-mm Main Gun on an M1A1 Tank	None	171-126-1070: Perform Operator Maintenance on the 120mm Breechblock Assembly on an M1A1 Tank	• TM 9-2350-264-10-1: (See Chapter 3, Section III, Maintain 120MM Main Gun)

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1A1 Tank and Gunnery (Continued)				
171-126-1066	Troubleshoot the NBC System on an M1A1 Tank	None		• TM 9-2350-264-10-1: (See Chapter 3, Section II, Auxiliary Systems [Malfunctions 142-150])
171-126-1068	Troubleshoot the 120-mm Main Gun on an M1A1 Tank	Training Module: Emergency Procedures for 120-mm Main Gun on an M1A1 Tank		• TM 9-2350-264-10-3: (See Chapter 3, Section II, Troubleshooting, Main Gun [Malfunctions 1111-116])
	Remove a Stuck 120-mm Round	Training Module: Emergency Procedures for 120-mm Main Gun on an M1A1 Tank	Load/Unload Main Gun on an M1A1 Tank (Task in Training Module entitled "Load, Unload, and Stow Main Gun Ammunition on an M1A1 Tank")	• TM 9-2350-264-10-1: Stuck Round, 120mm
	Apply Immediate Action for 120-mm Main Gun Failure-to-Fire	Training Module: Emergency Procedures for 120-mm Main Gun on an M1A1 Tank		• TM 9-2350-264-10-1: Failure-to-Fire - Main Gun
171-126-1070	Perform Operator Maintenance on the 120-mm Breechblock Assembly on an M1A1 Tank	None		• TM 9-2350-264-10-1: (See Chapter 3, Section III, Maintain 120MM Main Gun - Service Breechblock)
171-126-1079	Adjust Crew Compartment Pressurization on an M1A1 Tank	Training Module: Adjust Crew Compartment Pressurization		• TM 9-2350-264-10-2: Crew Compartment Pressure Adjustment
M1A1 Loader				
	Load/Unload Main Gun on an M1A1 Tank	Training Module: Load, Unload, and Stow Main Gun Ammunition on an M1A1 Tank		• TM 9-2350-264-10-1: Main Gun - Loading; Clearing
171-126-1063	Stow Ammunition on an M1A1 Tank	Training Module: Load, Unload, and Stow Main Gun Ammunition on an M1A1 Tank		• TM 9-2350-264-10-1: Ammunition - Stowage Racks, Hull; Ammunition - Stowage Racks, Ready; Ammunition - Stowage Racks, Stowage
171-126-1081	Perform Loader's Prepare-to-Fire Checks and Services on an M1A1 Tank	None	171-126-1023: Prepare Loader's Station for Operation on an M1/M1A1 Tank 171-126-1063: Stow Ammunition on an M1A1 Tank	• GTA 17-6-44: M1A1 Prepare-to-Fire Checklist • TM 9-2350-264-10-1: Loader's Machinegun - PMCS; (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services, Loader's Station)

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Loader (Continued)				
171-126-1082	Perform Loaders After-Firing Checks and Services on an M1A1 Tank	None	171-126-1024: Secure Loader's Station on an M1/M1A1 Tank 171-126-1081: Perform Loader's Prepare-to-Fire Checks and Services on an M1A1 Tank	• TM 9-2350-264-10-1: Loader's Machinegun - PMCS; (See Table 2-2, Pre/Post Preventive Maintenance Firing Checks and Services, Loader's)
		Skill Level 2		
Armor Vehicle Gunnery M1/M1A1				
171-122-1013	Zero the M240 Coax Machine Gun on an M1/M1A1 Tank	None	171-122-1012: Perform Operator Maintenance on an M240/M240C Machine Gun	• TM 9-2350-255-10-1: Coaxial Machinegun - Zeroing • TM 9-2350-264-10-1: Coaxial Machinegun - Zeroing
171-126-1029	Prepare Gunner's Station for Operation on an M1/M1A1 Tank	None		• GTA 17-6-48: Prepare and Secure the Gunner's Station on an M1A1 Tank • TM 9-2350-255-CL: (See Prepare Gunner's Station for Operation) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Gunner's Station, Prepare Station for Operation) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Gunner's Station, Prepare Station for Operation)
171-126-1030	Secure Gunner's Station on an M1/M1A1 Tank	None		• GTA 17-6-48: Prepare and Secure the Gunner's Station on an M1A1 Tank • TM 9-2350-255-CL: (See Power Down and Secure Gunner's Station) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Gunner's Station, Power Down and Secure Station) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Gunner's Station, Power Down and Secure Station)

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
Armor Vehicle Gunnery M1/M1A1 (Continued)				
171-126-1036	Engage Targets with the Main Gun from the Gunner's Station on an M1/M1A1 Tank	Study Guide: Engaging Targets with the M1/M1A1 Tank	Estimate Range (Task in Study Guide entitled "Range Estimation")	• GTA 17-6-12: Tank Sight Reticle Patterns
171-126-1053	Boresight an M1/M1A1 Tank	None	Boresight and Update the Muzzle Reference Sensor (MRS) (Task in Training Module entitled "Boresight and Update the Muzzle Reference Sensor")	• GTA 17-6-40: Boresight and Calibrate M1 Tank • GTA 17-6-45: Boresight and Calibrate M1A1 Tank
	Use M1/M1A1 Alternate Boresight Procedures	None		• ARI Graphic Training Aid: M1/M1A1 Alternate Boresight Procedures
	Boresight and Update the Muzzle Reference Sensor (MRS)	Training Module: Boresight and Update the Muzzle Reference Sensor (MRS)		• GTA 17-6-40: Boresight and Calibrate M1 Tank • GTA 17-6-45: Boresight and Calibrate M1A1 Tank
Gunner Gunnery M1				
171-126-1033	Perform Gunner's Prepare-to-Fire Checks and Services on an M1 Tank	None	171-126-1053: Boresight an M1/M1A1 Tank 171-126-1029: Prepare Gunner's Station for Operation on an M1/M1A1 Tank	• GTA 17-3-17: M1 Prepare-to-Fire Checklist • TM 9-2350-255-CL: (See Gunner's Pre-Fire Operations) • TM 9-2350-255-10-1: (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services, Gunner's Station)
Gunner Gunnery M1A1				
171-126-1080	Perform Gunner's Prepare-to-Fire Checks and Services on an M1A1 Tank	None	171-126-1053: Boresight an M1/M1A1 Tank 171-126-1029: Prepare Gunner's Station for Operation on an M1/M1A1 Tank	• GTA 17-6-44: M1A1 Prepare-to Fire Checklist • GTA 17-6-48: Prepare and Secure the Gunner's Station on an M1A1 Tank • TM 9-2350-255-CL: (See Gunner's Pre-Fire Operations) • TM 9-2350-264-10-1: (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services, Gunner's Station)

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
		SKILL LEVEL 3		
Tactics, Tank Commander Level				
061-306-6005	Prepare/Submit Standard Shelling, Mortaring, and Bombing Report	None	113-571-1019: Establish, Enter, and Leave a Radiotelephone Net	• ARI Graphic Training Aid: Standard Reporting Procedures for Shell, Mortar, and Bomb Reports
171-123-1002	Select Firing Positions	Study Guide: Select Firing Positions		
M1/M1A1 Tank Commander				
171-122-3010	Zero a Caliber .50 M2 HB Machine Gun on an M1/M1A1 Tank	None	071-022-0003: Operate a Caliber .50 M2 Machine Gun 171-122-3011: Boresight a Caliber .50 M2 HB Machine Gun on an M1/M1A1 Tank	• GTA 17-6-46: Boresight and Zero Commander's Weapon on an M1A1 • TM 9-2350-255-10-1: Zero - Caliber .50 Machinegun • TM 9-2350-264-10-1: Zero - Caliber .50 Machinegun
171-122-3011	Boresight a Caliber .50 M2 HB Machine Gun on an M1/M1A1 Tank	None	071-022-0001: Perform Operator Maintenance on a Caliber .50 M2 Machine Gun	• GTA 17-6-40: Boresight and Calibrate M1 Tank • GTA 17-3-17: M1 Prepare-to-Fire Checklist • GTA 17-6-46: Boresight and Zero Commander's Weapon on an M1A1 • TM 9-2350-255-10-1: Boresight - Caliber .50 Machinegun • TM 9-2350-264-10-1: Boresight - Caliber .50 Machinegun
171-126-1042	Prepare a Sketch Range Card for an M1/M1A1 Tank	Study Guide: Range Estimation		• FM 17-12; Tank Sketch Card • GTA 17-6-37: Tank Range Card/Sketch Range Card • FKG 17-22-9: Tank Range Card

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank Commander (Continued)				
171-126-3002	Prepare Commander's Weapon Station (CWS) for Operation on an M1/M1A1 Tank	None	171-122-3010: Zero a Caliber .50 M2 HB Machine Gun on an M1/M1A1 Tank 171-126-3005: Perform Tank Commander's Preventive Maintenance Prepare-to-Fire Checks and Services on an M1/M1A1 Tank	• GTA 17-6-26: Prepare and Secure the Commander's Weapon Station on an M1-Series Tank • GTA 17-6-47: Prepare and Secure Commander's Weapon Station on an M1A1 Tank • TM 9-2350-255-CL: (See Prepare Commander's Station for Operation) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Commander's Station, Prepare Station for Operation) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Commander's Station, Prepare Station for Operation)
171-126-3003	Secure Commander's Weapon Station (CWS) on an M1/M1A1 Tank	None		• GTA 17-6-26: Prepare and Secure the Commander's Weapon Station on an M1-Series Tank • GTA 17-6-47: Prepare and Secure Commander's Weapon Station on an M1A1 Tank • TM 9-2350-255-CL: (See Power Down and Secure Commander's Station) • TM 9-2350-255-10-1: (See Chapter 2, Section III, Commander's Station, Power Down and Secure Station) • TM 9-2350-264-10-1: (See Chapter 2, Section III, Commander's Station, Power Down and Secure Station)

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank Commander (Continued)				
171-126-3005	Perform Tank Commander's Preventive Maintenance Prepare-to-Fire Checks and Services on an M1/M1A1 Tank	None	071-022-0003: Operate a Caliber .50 M2 Machine Gun 171-126-1053: Boresight an M1/M1A1 Tank 171-122-1013: Zero the M240 Coax Machine Gun on an M1/M1A1 Tank	• GTA 17-3-17: M1 Prepare-to-Fire Checklist • GTA 17-6-44: M1A1 Prepare-to-Fire Checklist • TM 9-2350-255-10-1: (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services, Commander's Station) • TM 9-2350-264-10-1: (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services, Commander's Station)
171-126-3007	Perform Tank Commander's Preventive Maintenance After-Firing Checks and Services on an M1/M1A1 Tank	None		• TM 9-2350-255-CL: (See Commander's Post-Fire Operations: Cal .50 Machinegun M2; Commander's Post-Fire Operations: 105MM Main Gun) • TM 9-2350-255-10-1: (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services) • TM 9-2350-264-10-1: (See Table 2-2, Pre/Post Firing Preventive Maintenance Checks and Services)
171-126-3009	Direct Machine Gun Engagements on an M1/M1A1 Tank	Study Guide: Engaging Targets with the M1/M1A1 Tank		• FM 17-12-1: Chapter 3 - Target Acquisition; Chapter 4 - Range Determination; Chapter 5 - Ammunition and Target Destruction; Chapter 7 - Machineguns; Chapter 8 - Fire Distribution and Control

TASK NUMBER	TASK	TRAINING METHOD	PREREQUISITE TASKS	JOB AID
M1/M1A1 Tank Commander (Continued)				
171-126-3010	Direct Main Gun Engagements on an M1/M1A1 Tank	Study Guide: Engaging Targets with the M1/M1A1 Tank		• FM 17-12-1: Chapter 3 - Target Acquisition; Chapter 4 - Range Determination; Chapter 5 - Ammunition and Target Destruction; Chapter 6 - Direct Fire; Chapter 8 - Fire Distribution and Control
	Estimate Range	Study Guide: Range Estimation		• FM 17-12-1: Chapter 4 - Range Determination
	Acquire Targets	Study Guide: Target Acquisition		
Minefields				
051-192-3032	Direct Installation/ Removal of a Hasty Protective Minefield	None		• ARI Graphic Training Aid: Hasty Protective Minefield
Miscellaneous				
	Implement Preventive Medicine Countermeasures	None		• GTA 8-5-43: Preventive Medicine Countermeasures (PMC) for Company-Size Units
		Other		
Tank Table VIII				
	Conduct Tank Table VIII	Study Guide: Specifications for Table VIII		• ST 17-12-RC: Reserve Component Tank Gunnery Training Program • FM 17-12-1: Tank Combat Tables M1

Appendix D

Guide for the Development of Tank Platoon Scenarios for Implementation on M-SIMNET

Guide for the Development of Tank Platoon Scenarios For Implementation on M-SIMNET

Introduction

The M1 Mobile Simulation Networking (M-SIMNET) training device can provide a Reserve Component (RC) armor unit unique opportunities for conducting platoon-level training. Because it simulates many aspects of the battlefield, M-SIMNET enables a tank platoon to safely practice the performance of combat-related tasks under controlled conditions, without expending valuable resources. Tank crews train on M-SIMNET by performing individual-, crew- and platoon-level tasks within the context of a combat mission. The performance of these tasks is observed by trainers who conduct an after-action review (AAR) at the end of the training exercise. During the AAR, the trainers provide feedback so that crews will learn which tasks were performed correctly and which tasks were performed incorrectly. To ensure that this training is consistent with the unit's training mission, it is important that the events conducted during the exercise and the feedback given during the AAR be linked to unit training objectives.

The mission, the criteria for evaluating performance, and other essential information are contained in a scenario. It is generally the responsibility of the training developer to prepare the scenario. Because of numerous differences between the conduct of a mission in the field and its conduct on M-SIMNET, special care must be taken in preparing a scenario for implementation on M-SIMNET.[1] This document and the accompanying set of three scenarios was developed to assist the training developer in preparing scenarios for M-SIMNET. The three scenarios are intended to serve two functions. First, they will enable the RC unit to conduct platoon-level training on M-SIMNET as soon as the device becomes available. Second, they will provide a model for the development of additional scenarios by the unit's training developer. The three scenarios, which are Annexes to this guide, are: conduct a movement to contact, conduct a hasty attack, and conduct a deliberate defense.

Because the scenarios are intended to be used by RC units being trained for the first time on M-SIMNET, the assumption was made that the crews would have little experience in conducting platoon operations. The scenarios were therefore designed to be relatively easy to execute. For example, there is no training objective pertaining to indirect fire. As the units become more proficient in conducting platoon-level operations, more difficult tasks, such as calling for indirect fires, may be included in scenarios prepared by training developers.

Procedures for Preparing Training Scenarios for M-SIMNET

The procedures for developing a training scenario are described below as a sequence of five activities.

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[1]The differences between the performance of crew- and platoon-level tasks in the field and their performance on M-SIMNET are described in the SIMNET User's Guide.

1. Prepare Training Objectives

Given limited access to the M-SIMNET, it is important that training time be used efficiently. The primary goal for the commander should be to use M-SIMNET to support the unit training program. The specific objectives should be selected from appropriate doctrinal training programs such as ARTEP 17-237-10-MTP, Mission Training Plan for the Tank Platoon. The overall goal of any unit training on M-SIMNET should be to use the device to conduct small unit tactical training.

The unit commander should use several criteria when selecting the tasks to be trained on M-SIMNET:

- The unit's Mission Essential Task List (METL). This list specifies the essential tasks the unit must be able to perform to accomplish its wartime mission. The list may also include enabling sub-tasks underlying essential tasks.

- Training priorities. The tasks or sub-tasks from the METL that have been identified as unit weaknesses should be assigned a high priority for training.

- Suitability for training on M-SIMNET. Some tasks cannot be performed at all on M-SIMNET, and some can be performed only in part. For example, machineguns are not simulated and crews cannot dismount their vehicles. Appendix A of the SIMNET User's Guide recommends the platoon tasks that can be trained on SIMNET. These tasks are categorized into three types according to degree to which they can be trained to the ARTEP or tactical table standard: HIGH (tasks that can be performed with no major limitations), PARTIAL (tasks that can be performed, but with at least one major limitation), and MINIMAL (tasks that can be performed, but with several major limitations). Appendix A also lists the tasks that are not appropriate for training on SIMNET. The training developer should examine the ratings in Appendix A of the SIMNET User's Guide because the ratings pertain to M-SIMNET as well as to SIMNET.

- The unit's familiarity with M-SIMNET. Training on SIMNET requires extensive familiarization with the device. Although operator training on the simulator should not be a primary training objective, it is an important enabling task that must be learned before the unit can use the simulator effectively.

A unit commander may select the tasks that he would like to have trained on M-SIMNET, but he may not state the specific training objective. When this happens, the training developer must specify the training objective, and he should obtain the commander's approval before proceeding further. The training developer can consult ARTEP 17-237-10-MTP, Mission Training Plan for the Tank Platoon, to extract the training objectives that correspond to the commander's intentions.

2. Prepare Scenario Narrative

The scenario narrative is a brief description of the expected flow of the scenario. It should specify the type of mission in which the platoon will participate, and the general sequence of events that will take place during the execution of the scenario.

3. Prepare Set-Up Instructions

An M-SIMNET scenario must specify the starting conditions for the training exercise. These conditions are as follows:

- Element - the type of unit that will be trained on M-SIMNET. For example, the element may be a friendly tank platoon or tank section.

- Task - the type of mission that will conducted by the element to be trained. For example, the friendly tank platoon may conduct a movement to contact.

- OPFOR Instructions - a set of general instructions describing the actions of the OPFOR during the execution of the scenario. For example, the instructions may state that the OPFOR is to defend battle positions Alpha, Bravo, and Charlie.

- OPFOR Size/Composition - a list of the type and number of different OPFOR weapon systems that the friendly force will encounter during the execution of the scenario. For example, the OPFOR may have 3 T-72 tanks and 2 BMPs at Battle Position Alpha.

- Semiautomated Force (SAFOR) Gunner Criteria - if the semiautomated force capability of M-SIMNET is to be used during the execution of the scenario, the level of expertise must be specified.[2] There are three levels that may be chosen: novice, competent, and marksman. The probability that a SAFOR-controlled weapon system will hit its target increases with the level of expertise. To minimize the likelihood that a friendly vehicle will be hit during the execution of the exercise, the novice level should be chosen. Other levels can be chosen to represent a more capable OPFOR, but this will increase the likelihood that one or more friendly tanks will be hit and destroyed. It is recommended that higher levels of OPFOR expertise be used when RC units become more profient at conducting platoon-level missions.

- SAFOR Start Grid - the 6-digit grid location for each SAFOR-controlled unit. This location will represent the center of mass of the unit.

- SAFOR Orientation - the direction in which the SAFOR-controlled unit will be facing during the start of the exercise and at various times during the execution of the scenario.

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[2]The SAFOR is an unmanned, semi-automated force that is controlled by one or two persons assigned to a SAFOR station. A more detailed description of this M-SIMNET feature is contained in the SIMNET User's Guide.

- SAFOR End Grid - the 6-digit grid location for each SAFOR-controlled unit at the end of the exercise.

- SAFOR Movement Instructions - a statement of whether or not the SAFOR-controlled unit should move, and if so, on what route and at what speed.

- Enemy Actions - a statement of the actions the OPFOR will perform during the execution of the scenario.

- SAFOR Engagement Criteria - a statement of the conditions that must be met for the SAFOR-controlled unit to engage targets.

- Vehicle Status - a statement of the amount of fuel and ammunition that is available for each type of vehicle and the maintenance status of the vehicle. The fuel and ammunition capacity of the vehicle must be taken into account. Maintenance status may be new or may be assigned a number from 1 to 5. The higher the number, the more likely it will be that the vehicle will break down during the execution of the scenario.

Specific instructions for friendly elements are as follows:

- Blue Instructions - a very short statement of the task assigned to the platoon.

- Blue Size/Composition - a list of the friendly forces that are participating in the scenario. Included are the platoon being trained and any units that are either notional or controlled at the SAFOR station.[3]

- Start Grid - a list of 8-digit grid locations for each friendly platoon. An 8-digit grid is used instead of a 6-digit grid to space the vehicles with more precision.

- Orientation - the general direction which each friendly unit is facing.

- End Grid - the location where the platoon should be at the end of the exercise.

- Movement Instructions - a statement describing the movement of the friendly forces during the execution of the scenario.

- Other Actions - a statement describing any other actions the blue platoon must perform during the execution of the scenario.

- Engagement Criteria - a statement of the conditions that must be present before the platoon may engage the enemy.

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[3]A notional unit is one that assumed to be present on the battlefield, but is not actually simulated. A SAFOR unit is a semi-automated force controlled by one or two persons assigned to a SAFOR station.

- Vehicle Status - a statement of the amount of fuel and ammunition that is available for each type of vehicle and the maintenance status of the vehicle. The fuel and ammunition capacity of the vehicle must be taken into account. Maintenance status may be new or may be assigned a number from 1 to 5. The higher the number, the more likely it will be that the vehicle will break down during the execution of the scenario. During initial training on M-SIMNET, it is recommended that friendly vehicles be new (Maintenance Status 1) and fully loaded. The probability of a vehicle breakdown can be increased and the vehicles can be partially loaded as units become more experienced in conducting platoon-level missions.

4. Prepare OPORD and Overlays

The planner should prepare a company/team operation order (OPORD). The OPORD should be written in the five-paragraph format as described in FM 17-15, Tank Platoon. The planner should also prepare two sets of map overlays--one for the friendly force and one for the OPFOR. The overlay should show relevant control measures as such the assembly area, axis of advance, checkpoints, line of departure, target reference points, and the objective.

5. Prepare Control Plan and Evaluation Record

The Control Plan is a sequence of the activities that should take place during the conduct of the scenario. The planner should determine these activities by analyzing the training objectives. The activities comprising each training objective are observable actions that the platoon should perform during the scenario if it successfully meets that training objective. The Evaluation Record associated with each activity is a record of whether the platoon successfully performs the activity (is scored a GO) or fails to successfully perform the activity (is scored a NO-GO). The scores are used for the after action review.

If an activity cannot be observed by the scorer, it should not be listed on the Control Plan. If the activity can be observed and evaluated, the planner should describe in a "remarks" column how to observe the activity. Some activities can be observed and scored from the stealth vehicle, from the plan view display (PVD), and from monitoring the platoon net. The Unit Performance Assessment System (UPAS) developed by the U.S. Army Research Institute (ARI) may also be used if it is available.[4]

[4]Information about the Plan View Display or the Stealth Vehicle can be obtained from the SIMNET User's Guide. Information about the Unit Performance Assessment System can be obtained from the ARI Field Unit at Fort Knox or the Boise Element in Boise, ID.

Appendix E

Conduct a Movement to Contact

M-SIMNET Platoon-Level Exercise

TASK: Conduct a movement to contact

TRAINING OBJECTIVES:

Given four fully operational M1 simulators, SIMNET special mapsheet with overlay, automated opposing forces, notional friendly forces, and an OPORD, the platoon will execute a platoon defensive mission. The platoon will:

1. move along the specified route without error;
2. report all control measures IAW SOP;
3. execute appropriate actions on contact;
4. engage enemy forces with direct fires;
5. assault designated objective(s).

SCENARIO NARRATIVE:

The tank platoon performs a movement to contact as one platoon within a company team. The platoon leader receives the company OPORD from the Co (Tm) commander and prepares for operations. The platoon moves from the TAA along designated routes, crosses the LD/LC, and continues to maneuver (unopposed) for approximately seven Km. The platoon makes contact vicinity CP six and performs actions on contact. The platoon then performs fire and maneuver to close with and assault the enemy position. The platoon then consolidates and reorganizes on the objective and prepares to continue the mission.

SETUP INSTRUCTIONS:

ELEMENT:	One Blue tank platoon
TASK:	Conduct a movement to contact
OPFOR INSTRUCTIONS:	Defend BPs Alpha,Bravo, & Charlie
OPFOR SIZE/ COMPOSITION:	BPs Alpha & Bravo: 3 T-72, 2 BMP BP Charlie: 1 T-72, 1 BMP
SAFOR GUNNER CRITERIA:	Novice
SAFOR START GRID:	ES 629898 (BPs A & B) ES 618894 (BP C)
SAFOR ORIENTATION:	North toward TRP 160 then 157 (BP C) North toward TRP 161 then 156 (BP A1) North toward TRP 158 then 159 (BP A2)
SAFOR END GRID:	(Same as start grid)
SAFOR MOVEMENT INSTRUCTIONS:	Occupy BPs per overlay, remain in BP.
ENEMY ACTIONS:	Engage when enemy is acquired.
SAFOR ENGAGEMENT CRITERIA:	Do not engage past PL DIAMOND.
VEHICLE STATUS:	100% fuel, ammo, maintenance.

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FRIENDLY INSTRUCTIONS:	Conduct movement to contact per OPORD.
FRIENDLY SIZE/COMPOSITION:	Blue platoon - 4 SIMNET M1 simulators Green platoon - notional or automated Red platoon - notional or automated
START GRID:	Blue platoon - ES 61859734 Green platoon - ES 61839734 Red platoon - ES 61879734
ORIENTATION:	South along axis BLADE.
END GRID:	ES 625895
MOVEMENT INSTRUCTIONS:	Move IAW published OPORD.
OTHER ACTIONS:	None
ENGAGEMENT CRITERIA:	Engage when enemy is acquired and within range.
VEHICLE STATUS:	100% fuel, ammo, maintenance.

CLASSIFICATION

copy___of ____copies
A/ 1-14 armor

REFERENCE: SIMNET Fort Knox map series, 1:50,000 (sheet 1

TIME ZONE: Alpha

1. SITUATION.

a. Enemy. Remnants of the 6th MRB are establishing hasty defensive positions in TF zone and remain at about 60% strength. Indirect fire and electronic warfare capabilities are still significant. No chemicals are expected to be used. Indications are that the enemy will defend to retain his forward positions until 2nd echelon forces arrive and offensive operations are resumed.

b. Friendly. CDR's Intent. Conduct a rapid and violent attack to seize assigned objectives. Priority is to locate and destroy enemy in zone rather than seizing terrain.

(1) Tm Alpha 1-14 AR attacks to destroy enemy security zone before defensive positions are established.

(2) Tm Bravo attacks to our left to seize OBJ FOX.

(3) Tm Charlie attacks to our right to seize OBJ SNAKE.

(4) Co Bravo follows us in zone as reserve.

(5) 1-45 FA DS 1-14 AR

2. MISSION. Co/Tm Alpha, 1-14 AR attacks 0600 (DTG) to locate and destroy enemy forces in zone. Seize OBJ DOG (vic ES 625895). O/O continue attack, pursue fleeing forces.

3. EXECUTION.

(a) Concept of operation.

(1) CDR's Intent. Conduct an aggressive movement to gain contact. Find, fix, and destroy all enemy elements. Orient on enemy destruction, seizure of terrain is secondary. Do not bypass enemy resistance.

(2) Maneuver. Cross LD in company wedge, traveling, to OBJ DOG. Blue plt is lead plt, Green plt on the left, and Red on the right. AT PL AXE, Co continues in traveling overwatch. Blue plt leads, Green plt to the LEFT, and Red plt to the RIGHT. Upon contact Blue plt rapidly locate and destroy enemy supported w/fires from Green and Red plts. If contact too big for Blue, Blue fixes and holds enemy, while Green and Red maneuver forward to assault. Upon reaching PL SWORD, we will bound by plts. Green and Red plts will come on line and overwatch as Blue continues forward to seize CP 06. Blue plt then assaults DOG A1, supported by Green. Red supports as Green assaults DOG A2, then Blue and Green support as Red assaults OBJ DOG C.

(3) Fires. Lead plt has priority of fires. All TRPs are coordinated as indirect fire tgts.

(b) Specific Instructions:

(1) Blue plt, lead plt. Initial priority of fires. Seize CP 06. Seize OBJ DOG A1, orienting on TRP 108. Support Assault on OBJ DOG A2 and C.

(2) Green plt. Follow Blue plt, then eastern flank of wedge. Overwatch Blue to CP 06 from TRP 113. Support assault on DOG A1. Seize DOG A2, orienting on TRP 109. Support Red in seizing DOG C.

(3) Red plt. Trail plt. At PL SWORD, move on west flank of wedge. Overwatch Green from CP 04. Support Blue seize CP 06. Support Blue and Green seizing DOG A1&2. Seize OBJ DOG C, orienting on TRP 111.

(c) Coordinating Instructions.

(1) MOPP level Ø is in effect.

(2) ADA status white, weapons tight.

4. SERVICE AND SUPPORT. Resupply in OBJ DOG. 1SG follow w/trains one terrain feature behind main body. All else per SOP.

5. COMMAND AND SIGNAL.

a. Signal. Current SOI in effect.

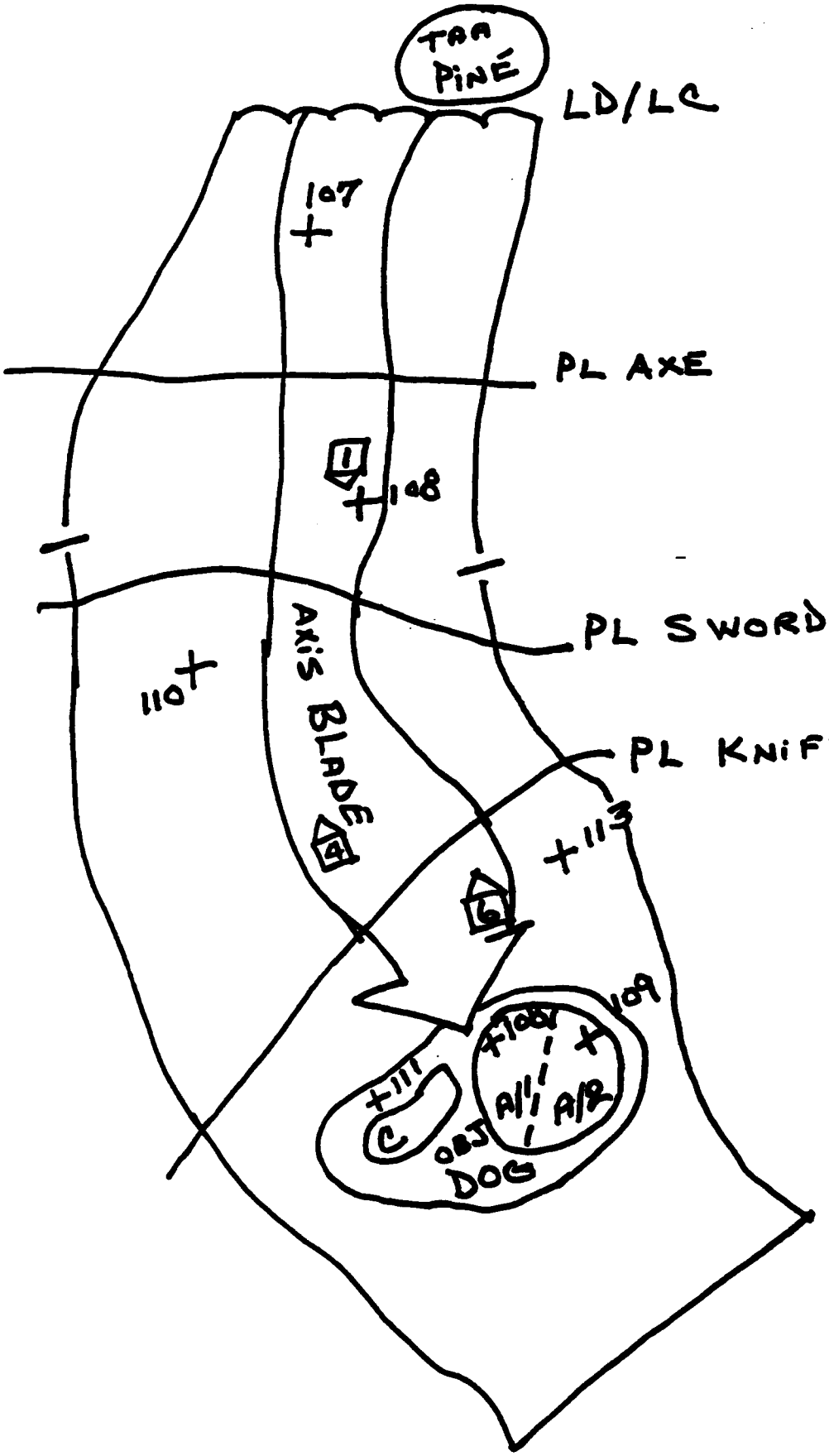
b. Command. CO with Blue plt, XO w/Green plt. Succession of command: XO, Blue plt, Green, Red, 1SG, then PSGs in order, Bn TOC vic ES 620975.

Tm Co
Tm Alpha, 1-14 AR

PLT-OVERLAY
(Move/ Contact-03)

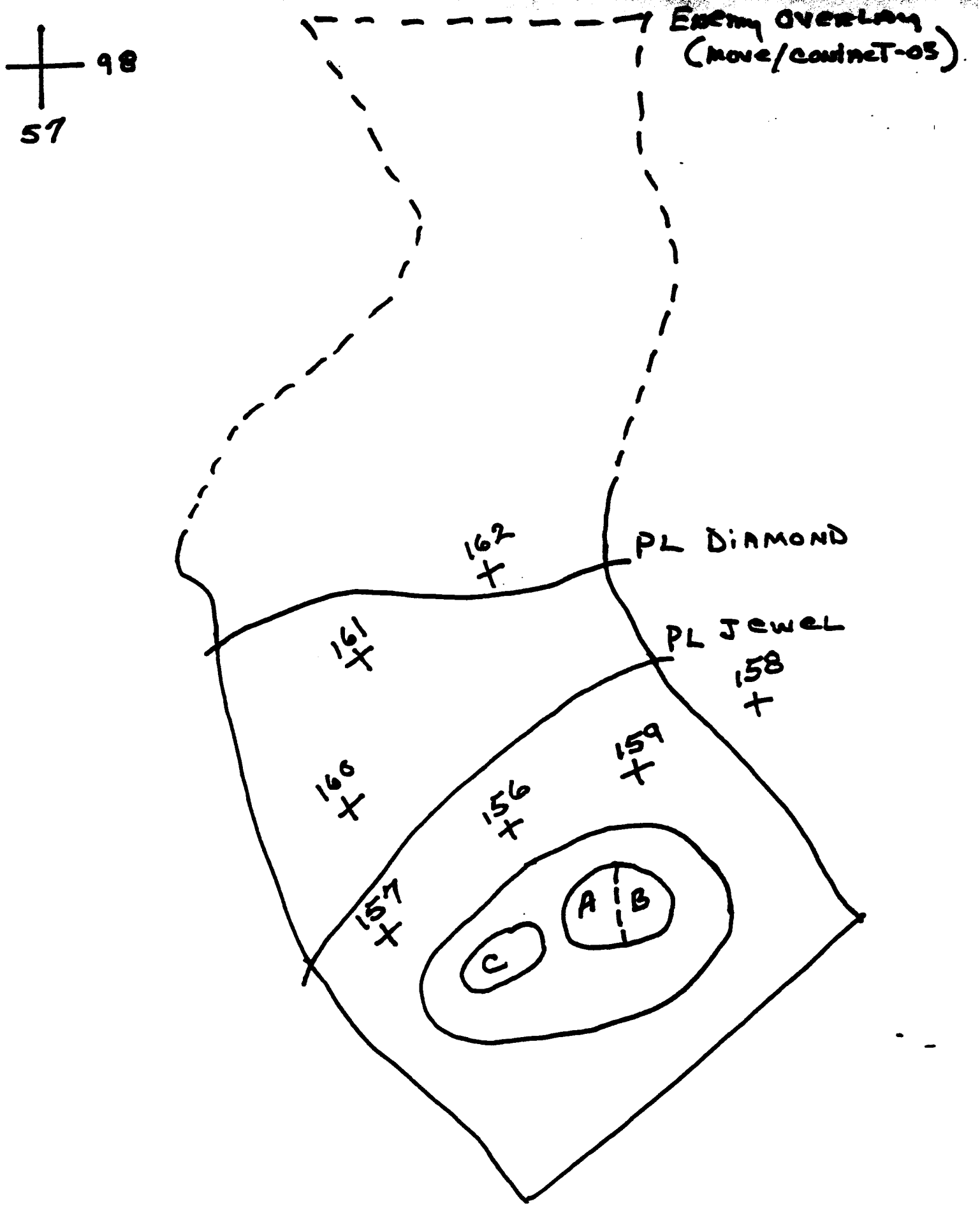
98

57



66

86


98
57
Enemy Overlay
(move/contact-05)
162
PL DIAMOND
161
PL JEWEL
158
159
160
156
157
A
B
C
66
86

CONTROL PLAN AND EVALUATION RECORD:

EVENT #	ACTIVITY	REMARKS	GO	NO-GO
1.	Platoon moves along the specified axis without error.			
1a.	Platoon executes wedge formation IAW OPORD.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by generating "snapshot" of tanks at designated time. 360° security can be evaluated by examining each tank's turret azimuth at the designated time. Interval between tanks can be assessed by generating the average distance between lead tank and wingman at the designated time.	_____	_____

Comments: _____

_____

_____

1b.	Platoon uses traveling technique of movement.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by generating graph of tank's movement over designated time period. Examine each tank's vehicle speed to evaluate whether movement was continuous.	_____	_____

Comments: _____

_____

_____

EVENT #	ACTIVITY	REMARKS	GO	NO-GO
2.	Plt Ldr reports all control measure IAW SOP.	Evaluate by monitoring Co/Tm net.	_____	_____

Comments: _____

_____

_____

3.	Platoon executes actions on contact and reports contact.	Evaluate by viewing simulation via PVD or stealth vehicle and by monitoring platoon net.	_____	_____

Comments: _____

_____

_____

4.	Platoon employs direct fires to engage enemy forces.	Evaluate by viewing simulation via PVD or stealth vehicle and by monitoring platoon net. If UPAS is available, examine gunnery measures at time of battle.	_____	_____

Comments: _____

_____

_____

NOTE: Once platoon reaches PL SWORD, Plt Ldr needs to be informed that Green and Red platoons are in position to overwatch Blue's movement towards CP 06.

5.	Platoon assaults designated objectives.			
5a.	Platoon comes on line.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by generating graph of platoon's movement over designated time period.	_____	_____

Comments: _____

_____

_____

EVENT #	ACTIVITY	REMARKS	GO	NO-GO
5b.	Platoon leader reports to Co/Tm commander when objective secured.	Evaluate by monitoring Co/Tm net.	_____	_____

Comments: _____

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_____

5c.	Platoon selects and occupies defensive positions.	Evaluate by viewing simulation via PVD or stealth vehicle.	_____	_____

Comments: _____

_____

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Appendix F

Conduct a Hasty Attack

M-SIMNET Platoon-Level Exercise

TASK: Conduct a hasty attack

TRAINING OBJECTIVES:

Given four fully operational M1 simulators, SIMNET special mapsheet with overlay, automated opposing forces, notional friendly forces, and an OPORD, the platoon will move to and assault an enemy position. The platoon will:

1. move along the specified route without error;
2. report all control measures IAW SOP;
3. execute appropriate actions on contact;
4. engage enemy forces with direct fires;
5. assault designated objective(s).

SCENARIO NARRATIVE:

The tank platoon performs an attack on objective as one platoon of a company team. The platoon leader receives the company OPORD from the Co (Tm) commander and prepares for operations. The platoon moves along designated routes from the TAA, crosses the LD/LC, and continues to maneuver unopposed for approximately five Km through PL Jack. The platoon orients toward OBJ STEEL A, and secures CPs five and six. The platoon then performs actions on contact, performs fire and maneuver to close and assault OBJ STEEL A. The platoon consolidates on STEEL, reorganizes, and prepares to continue the mission.

SETUP INSTRUCTIONS:

ELEMENT:	1 Blue tank platoon
TASK:	Conduct a hasty attack
OPFOR INSTRUCTIONS:	Defend BP 06, if blue penetrates past PL IVAN, occupy BP 07.
OPFOR SIZE/COMPOSITION:	4 T-72 TANKS, 2 BMP
SAFOR GUNNER CRITERIA:	Novice
SAFOR START GRID:	ES 625962
SAFOR ORIENTATION:	South toward TRP 132 & 133, then to TRP 130 & TRP 131. If PL IVAN is passed, orient on BP 06.
SAFOR END GRID:	ES 618964
SAFOR MOVEMENT INSTRUCTIONS:	Occupy BP 06, when PL IVAN is penetrated, move to BP 06.
ENEMY ACTIONS:	Engage w/BMP, then tank.
SAFOR ENGAGEMENT CRITERIA:	Don't engage Blue until PL CLOSE is passed unless Blue engages first.
VEHICLE STATUS:	100% fuel, ammo, maintenance.

****

BLUE INSTRUCTIONS:	Attack assigned objectives per OPORD
BLUE SIZE/COMPOSITION:	Blue platoon - 4 SIMNET M1 simulators Green platoon - notional or automated. Red platoon - notional or automated.
START GRID:	Blue platoon - ES 66558795 Green platoon - ES 66578795 Red platoon - ES 66538785
ORIENTATION:	North, along Axis Dave.
END GRID:	ES 625965
MOVEMENT INSTRUCTIONS:	Move IAW published OPORD (plt Blue)
OTHER ACTIONS:	None
ENGAGEMENT CRITERIA:	Engage when enemy is acquired and within range
VEHICLE STATUS:	100% fuel, ammo, maintenance

CLASSIFICATION

copy___of___copies
A/ 1-14 ARMOR

REFERENCE: SIMNET Fort Knox Map Series, 1:50,000 (SHEET 1)

TIME ZONE: Alpha

1. SITUATION.

a. Enemy. Elements of the 6th GMRB are establishing a security zone in the company sector. Platoon sized defensive positions in depth are located throughout the sector. He is equipped with T-72 tanks and BMPs. He has extensive indirect fire and electronic warfare assets. No chemicals have been used in the past 48 hours. Indications are that he will defend to retain his forward positions.

b. Friendly. CDR's intent. Conduct a rapid movement to find the enemy, fix the enemy, then attack to seize assigned objectives.

(1) Tm Alpha 1-14 AR attacks to destroy part of security zone before enemy can establish defensive positions. Seize OBJ STEEL.

(2) Tm Bravo attacks to our left, seize OBJ IRON.

(3) Tm Charlie attacks to our right, seize OBJ WOOD.

(4) Co Bravo follows us in zone as reserve.

2. MISSION. Co/Tm Alpha, 1-14 AR attack 0600 along AXIS DAVE to seize OBJ STEEL (vic ES 625965). O/O continue attack south.

3. EXECUTION.

(a) Concept of operation.

(1) Cdr's intent. Conduct company wedge. Lead platoon develop situation out as far as possible to find then fix the enemy. Follow-on plts support lead plt during maneuver then attack OBJ STEEL.

(2) Maneuver. Cross LD in Co wedge. Blue plt is lead, green on the right and Red on the left. Anticipate rapid move to JACK. At JACK, Co continues in traveling overwatch. Blue leads, Green right and Red left. If light resistance Blue locates and destroys, if resistance is heavy Blue fixes and holds enemy, Red and Green plts maneuver to assault left and right of Blue plt. If we reach PL JACK w/o contact, Green and Red plts come on line as Blue plt attacks to seize CP 05 then bounds to seize CP 06 overwatched by Green and Red. Blue plt then attacks OBJ STEEL A, supported by Green and Red moving to seize STEEL B and C.

(3) Fires. Blue plt has priority of mortars. TRPs are indirect fire tgts. Smoke is not available.

(b) Specific instructions.

(1) Blue plt, lead plt. Priority of fires. Seize CP 05. Seize CP 06. Seize OBJ STEEL A, orienting on TRP 102. Support assault on STEEL B and C.

(2) Green plt, follow Blue, then east flank of wedge. Overwatch Blue to CP 05 and CP 06. Support Blue assault on STEEL A. Seize STEEL B. Orient on TRP 103.

(3) Red plt, trail plt. At PL JACK move on west flank of wedge. Overwatch Green. Support Blue assault on STEEL A. Seize OBJ STEEL C, orienting on TRP 104.

(c) Coordinating Instructions.

(1) MOPP level Ø in effect.

(2) ADA status is white, weapons tight.

4. SERVICE AND SUPPORT. Resupply on Objective. 1SG follow w/trains one (1) terrain feature behind Co. All else SOP.

5. COMMAND & SIGNAL.

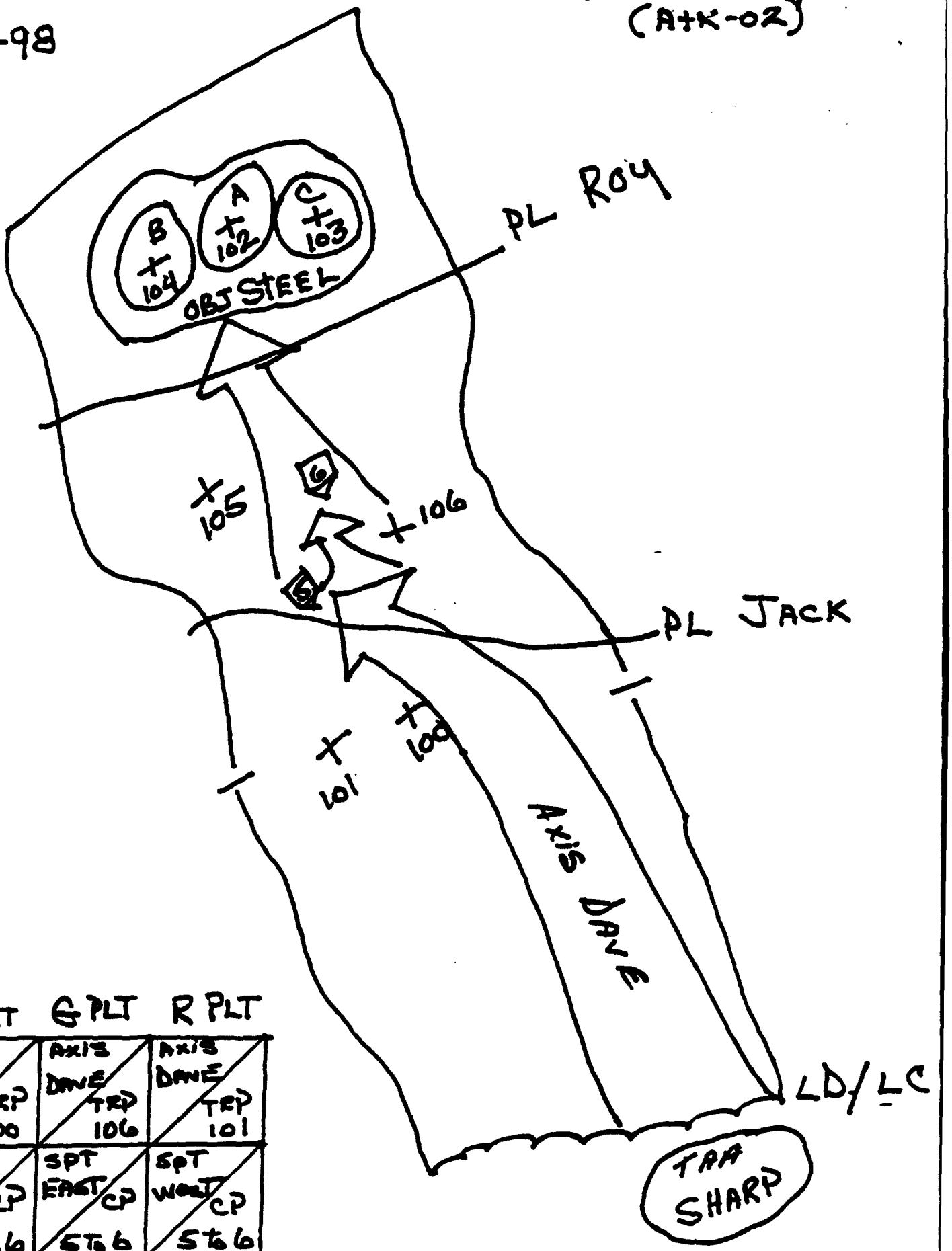
(a) Signal. Current SOI in effect.

(b) Command. I will be w/Blue plt. XO w Red. Succession of command: XO, B PLT, G PLT, R PLT, 1SG, then PSGs in same order. Bn TOC vic ES 635872.

Tm Co
Tm Alpha, 1-14 AR

PLT OVERLAY
(ATK-02)

98
59

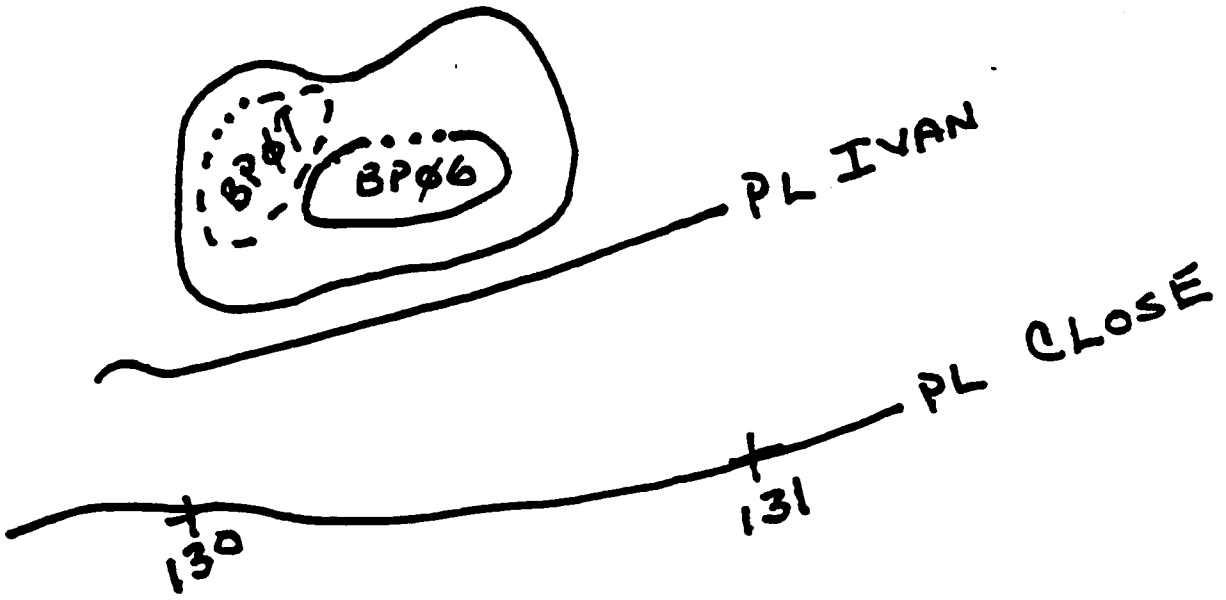


	B PLT	G PLT	R PLT
LC	AXIS DAVE / TRP 100	AXIS DAVE / TRP 106	AXIS DAVE / TRP 101
:K	ATK / CP 5 to 6	SPT EAST / CP 5 to 6	SPT WEST / CP 5 to 6
:L	STEEL A / TRP 102	STEEL C / TRP 103	STEEL B / TRP 104

68
96

98
60

ENEMY OVERLAY
(ATK-02)



68
86

CONTROL PLAN AND EVALUATION RECORD:

EVENT #	ACTIVITY	REMARKS	GO	NO-GO
1.	Platoon moves along the specified axis IAW OPORD.			
1a.	Platoon executes wedge formation as lead element in Co wedge IAW OPORD.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by generating "snapshot" of tanks at designated time. 360° security can be evaluated by examining each tank's turret azimuth at the designated time. Interval between tanks can be assessed by generating the average distance between lead tank and wingman at the designated time.	_____	_____

Comments: _____

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_____

1b.	Platoon uses traveling technique of movement.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by generating graph of tank's movement over designated time period. Examine each tank's vehicle speed to evaluate whether movement was continuous.	_____	_____

Comments: _____

_____

_____

NOTE: Once platoon reaches PL JACK, Plt Ldr needs to be informed that Green and Red platoons are in position to overwatch Blue's movement towards CP 05.

EVENT #	ACTIVITY	REMARKS	GO	NO-GO
2.	Plt Ldr reports all control measure IAW SOP.	Evaluate by monitoring Co/Tm net.	_____	_____

Comments: _____

_____

_____

3.	Platoon executes actions on contact and reports contact.	Evaluate by viewing simulation via PVD or stealth vehicle and by monitoring platoon net.	_____	_____

Comments: _____

_____

_____

4.	Platoon engages OPFOR with direct fires			
4a.	Platoon employs direct fires to destroy enemy forces.	Evaluate by viewing simulation via PVD or stealth vehicle and by monitoring platoon net. If UPAS is available, examine gunnery measures at time of battle.	_____	_____

Comments: _____

_____

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4b.	Platoon orients on TRPs IAW OPORD/movement matrix.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, examine tank's turret azimuth at designated times and compare to grid azimuth of TRPs on which they should be orienting.	_____	_____

Comments: _____

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_____

EVENT #	ACTIVITY	REMARKS	GO	NO-GO
5.	Platoon assaults designated objectives.			
5a.	Platoon comes on line prior to assault on objective.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by generating graph of platoon's movement over designated time period.	_____	_____

Comments: _____

_____

_____

5b.	Platoon leader reports to Co/Tm commander when objective secured.	Evaluate by monitoring Co/Tm net.	_____	_____

Comments: _____

_____

_____

5c.	Platoon selects and occupies defensive positions.	Evaluate by viewing simulation via PVD or stealth vehicle.	_____	_____

Comments: _____

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_____

Appendix G

Conduct a Deliberate Defense

M-SIMNET Platoon-Level Exercise

TASK: Conduct a deliberate defense

TRAINING OBJECTIVES:

Given four fully operational M1 simulators, SIMNET special mapsheet with overlay, automated opposing forces, notional friendly forces, and an OPORD, the platoon will execute a platoon defensive mission. The platoon will:

1. search for, acquire, and report enemy targets;
2. engage enemy forces with direct fires IAW OPORD;
3. if necessary, move to a subsequent battle position.

SCENARIO NARRATIVE:

The platoon defends subsequent battle positions as one platoon within a company team. The platoon leader receives the company OPORD from the Co (TM) commander and prepares for operations. The platoon occupies BP 25B and orients toward Engagement Area CAMEL. The platoon engages when SAFOR enters the north boundary of CAMEL. The platoon continues to engage the SAFOR in CAMEL until two SAFOR vehicles penetrate the southern boundary of EA CAMEL. At that time, the platoon occupies BP 27B, orients on TRP 114 and TRP 108, and continues to engage the SAFOR until the engagement ends with all SAFOR vehicles destroyed.

SETUP INSTRUCTIONS-PLATOON:

ELEMENT:	Blue tank platoon
TASK:	Conduct a deliberate defense
OPFOR INSTRUCTIONS:	Conduct movement to contact-hasty attack
OPFOR SIZE/ COMPOSITION:	RECON: 2-BMP; PLT: 4-T72, 2-BMP
SAFOR GUNNER CRITERIA:	Novice
SAFOR START GRID:	ES 632971
SAFOR ORIENTATION:	South along Axis HORSE (190 degrees)
SAFOR END GRID:	BP 25 (vic grid ES 607920)
SAFOR MOVEMENT INSTRUCTIONS:	Move south to attack Blue BP along Axis HORSE. One BMP split and move down axis GOAT to Blue BP.
ENEMY ACTIONS:	Engage when acquired
SAFOR ENGAGEMENT CRITERIA:	Engage when Blue is acquired.
VEHICLE STATUS:	100% fuel, ammo, maintenance

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FRIENDLY INSTRUCTIONS:	Defend battle position IAW OPORD
FRIENDLY SIZE/COMPOSITION:	Blue platoon - 4 SIMNET M1 simulators Green platoon - notional or automated Red platoon - notional or automated
START GRID:	Blue platoon - BP 25 (vic grid ES 607920) Green platoon - BP 25 (vic grid ES 613915) Red platoon - BP 25 (vic grid ES 602927)
ORIENTATION:	Northeast (IAW OPORD matrix)
END GRID:	Same as BP25 or BP 27 (IAW OPORD)
MOVEMENT INSTRUCTIONS:	Defend subsequent BP (IAW OPORD)
OTHER ACTIONS:	None
ENGAGEMENT CRITERIA:	Engage when enemy is in range and acquired.
VEHICLE STATUS:	100% fuel, ammo, maintenance.

CLASSIFICATION

COPY__OF___COPIES
A/ 1-14 ARMOR

REFERENCE: SIMNET Fort Knox Map Series, 1:50,000

TIME ZONE: Alpha

1. SITUATION.

a. Enemy. Two battalions of the 6th GMRR will attack south in the 1st brigade zone in an attempt to create a penetration for the 6th GMRR(-) to exploit. The enemy is equipped with T72s and BMPs. He has an extensive electronic warfare and indirect fire capability. Chemical weapons have not been used in the past 24 hours. Indications are the enemy's initial attack will be from the Regimental recon elements to attempt to locate and fix any strong resistance.

b. Friendly. TF CDR's intent. Achieve at least 2/3rds destruction of enemy elements from the initial BPs; complete destruction of the enemy from the subsequent BPs.

(1) Tm Alpha 1-14 AR defends in sector to destroy enemy recon elements and defeat the first echelon battalion of the 6th GMRR.

(2) Tm Bravo defends BP 38 to our left.

(3) Tm Charlie defends BP 12 to our right.

(4) Co B 2-14 AR is TF reserve.

(5) TF scout plt initially screens to the TF front.

(6) 1-44 FA DS to 1st Bde.

2. MISSION. Co/Tm Alpha, 1-14 AR defends BP 25 NLT 0630 (DTG). O/O defend BP 27.

3. EXECUTION.

a. Concept of the operation.

(1) CDRs intent. We will defend initially with 3 plts abreast, orienting into EA CAMEL. I expect to destroy at least 2 plts of the lead company in EA CAMEL. We will complete the destruction of the lead company from BP 25 and halt any following elements from there.

(2) Maneuver. Establish as per the defensive matrix. Trigger point is the north edge of EA CAMEL. Engage enemy outside of CAMEL with indirect fires only. Break point for BP 25 is if 2 tanks penetrate south of CAMEL. Blue plt will disengage first, then Green, then Red.

(3) Fires. Co has priority of TF mortars. Priority of fires within the company to Red plt. All TRPs are plotted with indirect fires. Smoke may be fired only with my approval.

b. Specific instructions. See defensive matrix.

c. Coordinating instructions.

(1) MOPP Ø is in effect.

(2) ADA status white, weapons tight.

4. SERVICE AND SUPPORT. All items per SOP. Company trains initially behind BP 27. 1SG notify platoons of changes.

5. COMMAND AND SIGNAL.

a. Signal. Current SOI in effect.

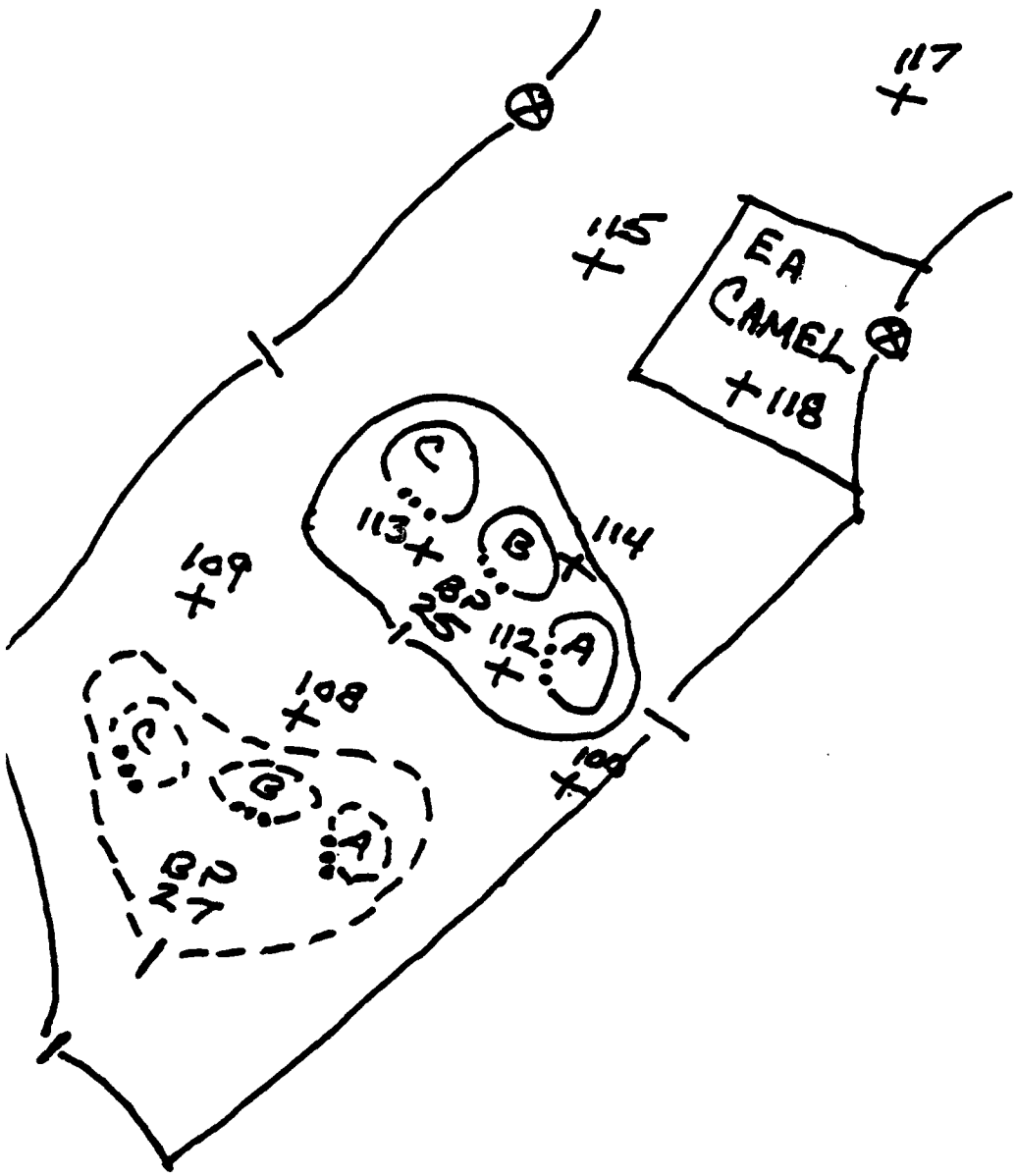
b. Command. I will be with Blue plt, XO with Green plt. Succession of command: XO, Green plt, Blue plt, Red plt, 1SG, and then PSGs in that order.

Tm Co
Tm Alpha, 1-14 AR

PLT-overlay
(defend-01)

58
ES 98

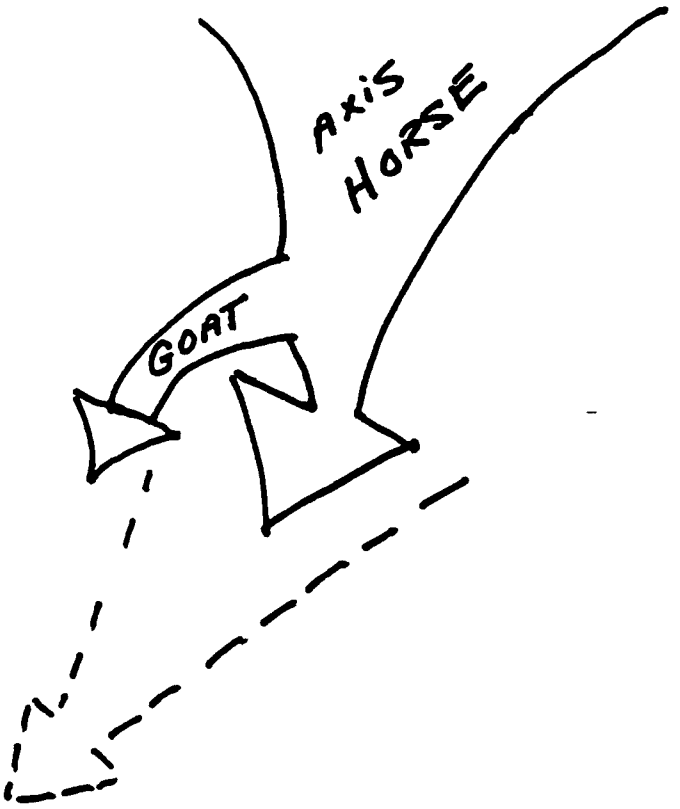
	B PLT	G PLT	R PLT
OCC	25B EA CAMEL	25A EA CAMEL	25C TRP 115
PREP	27B TRP 114- 112-108	27A TRP 110	27C TRP 104- 113



ES 87
66

Enemy overlay
(Blue def-01)

58
98



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CONTROL PLAN AND EVALUATION RECORD:

EVENT #	ACTIVITY	REMARKS	GO	NO-GO
1.	Platoon searches for, identifies, and reports enemy targets.			
1a.	Crews search for enemy targets within designated sectors.	Evaluate by viewing simulation via PVD or stealth vehicle.	_____	_____

Comments: _____

_____

_____

1b.	First TC to identify enemy targets issues contact report.	Evaluate by monitoring platoon net.	_____	_____

Comments: _____

_____

_____

2.	Platoon engages enemy forces with direct fires IAW OPORD.			
2a.	Platoon leader issues preparatory fire command.	Evaluate by monitoring platoon net.	_____	_____

Comments: _____

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2b.	Platoon executes fires when enemy forces cross the trigger point IAW OPORD.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by comparing platoon's gunnery measures at the time the enemy crosses the grid coordinates corresponding to the trigger point.	_____	_____

Comments: _____

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EVENT #	ACTIVITY	REMARKS	GO	NO-GO
2c.	Platoon engages enemy targets in its sector using specified firing technique and pattern.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by comparing the times and targets at which the platoon's tanks executed fires.	_____	_____

Comments: _____

_____

_____

2d.	Platoon destroys at least 2/3rds of enemy elements IAW OPORD.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by examining platoon's gunnery measures.	_____	_____

Comments: _____

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_____

3.	If necessary, platoon displaces to subsequent battle position.			
3a.	Platoon disengages when enemy crosses break point IAW OPORD.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by examining tank's vehicle speed and grid coordinates following time the enemy crosses the grid coordinates corresponding to the break point.	_____	_____

Comments: _____

_____

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EVENT #	ACTIVITY	REMARKS	GO	NO-GO
3b.	Platoon occupies subsequent battle position IAW OPORD.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by examining tank's grid coordinates.	_____	_____

Comments: _____

_____

_____

3c.	Platoon destroys remaining enemy forces IAW OPORD.	Evaluate by viewing simulation via PVD or stealth vehicle. If UPAS is available, evaluate by examining platoon's gunnery measures.	_____	_____

Comments: _____

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